

## Chapter 4: Refuge and District Management

### Current Refuge and District Programs: Where We Are Today

Consistent with its authorizing legislation, Minnesota Valley National Wildlife Refuge conducts a wide array of wildlife conservation activities within the Lower Minnesota River Valley and its District. The Master Plan for the Refuge, which was completed in 1984, called for the establishment of grasslands and food plots (corn and soybeans) on Refuge floodplain to enhance the area for waterfowl nesting and migration. Following some unsuccessful attempts to meet these objectives, the Refuge reassessed its habitat restoration and management programs and, with the input of other conservationists, developed its Landscape Plan in 1993. This plan basically set forth the philosophy of restoring Refuge plant communities to native species. It also identified the importance of using natural processes such as prescribed fire and water management to maintain the diversity and productivity of these communities. This philosophy remains today and will be integral within this Comprehensive Conservation Plan. In brief, the Refuge's habitat restoration and management program can be summarized by the phrase "native species and natural processes."



Photograph by Scott Sharkey

The Refuge's urban setting also offers unique opportunities to interact with diverse and supportive audiences. For example, Refuge staff have the privilege of providing environmental education programs to inner-city schools as well as those located in suburban or rural locations. Likewise, hunting, fishing, and wildlife observation, photography, and interpretive opportunities are provided on Refuge and District lands.

### Habitat Restoration

Since its establishment, nearly 12,000 acres have been acquired or placed under management agreement within the Refuge. Initially, some of the former agriculture lands (less than 100 acres) were converted to floodplain grasslands for waterfowl nesting purposes. Introduced species such as Reed's canary grass and others were planted to a variety of native grasses. However, during 1992-93 all cropping ceased on remaining Refuge agricultural fields (less than 200 acres). No deliberate attempts were made to re-establish a preferred plant community on these areas. Consequently, early succession species such as cottonwood, willow, and box elder emerged as well as thistle and ragweed.

In recent years, the Refuge has emphasized the restoration of all lands to native plant communities. For example, bur oak, silver maple, and green ash have been planted to complement natural succession and to increase diversity in the floodplain. Likewise, a diverse mixture of native grasses and forbs have been reestablished on upland sites that historically contained grasslands. Wetland restoration activities have included the

plugging of drainage ditches, the mechanical removal of woody vegetation from wet meadows and fens, and the installation of outlet ditches and water control structures on larger wetlands.

Habitat restoration activities on waterfowl production areas and easements also follow this same philosophy. Native grasses are restored on upland areas and wetlands are restored to historic levels when possible. Due to logistical concerns, water control structures are generally not installed on wetlands located on Waterfowl Production Areas or easement lands.

## **Habitat Management on the Refuge**

The primary objective of the habitat management program at the Refuge is to maintain diverse, productive, and sustainable native plant communities. Through periodic treatments, these lands maintain their value to Refuge wildlife and help meet their production, feeding, and migration requirements.

To assist in the management of these habitats, the Refuge in cooperation with the MnDNR and others has completed cover-type GIS mapping for all units of the Refuge. These units are mapped using the Minnesota Land Cover Classification System, which integrates cultural features such as residences and roads, non-native vegetation, and natural and semi-natural vegetation into a comprehensive system (Figures 5-9).

### Deep Water Habitats

Horseshoe Lake on the Rapids Lake Unit is the only deep water habitat on the Refuge. Historically, this lake was an oxbow of the Minnesota River but it has since become disconnected from the main channel. The depth of this lake is currently unknown, as is the composition of its fishery. Aquatic exchange with the Minnesota River does occur nearly every year during spring flooding. This open water pool serves as a loafing area for waterfowl, marsh birds, and occasional seasonal habitat for shorebirds. The trees surrounding the lake provide good perch sites for a number of species including herons, bitterns, and raptors such as the Bald Eagle and Red-tailed Hawk.

### Small Streams

Several small streams exist on the Refuge and some of these historically supported native brook trout populations. The origins of the larger streams, such as Sand Creek, are in the watershed above the river valley. Some streams originate from springs within the bluff and bluff/floodplain transition zone of the Minnesota River. To date, no active habitat management has been undertaken on these streams.

### Wetlands

The Refuge contains a variety of wetlands including fens, wet meadows, and large riverine marshes. Water control structures and outlet ditches have been installed on several of the riverine marshes. Over the years, three moist soil management units and one green tree reservoir have also been established within the floodplain of the Minnesota River. Most of these wetlands provide good quality production, brood rearing, feeding, and/or migration habitats for a host of resident and migratory species. They also provide good quality spawning and nursery habitat for fish that inhabit the Minnesota River.

Figure 5: Existing Habitat (2002), Long Meadow Lake and Black Dog Units

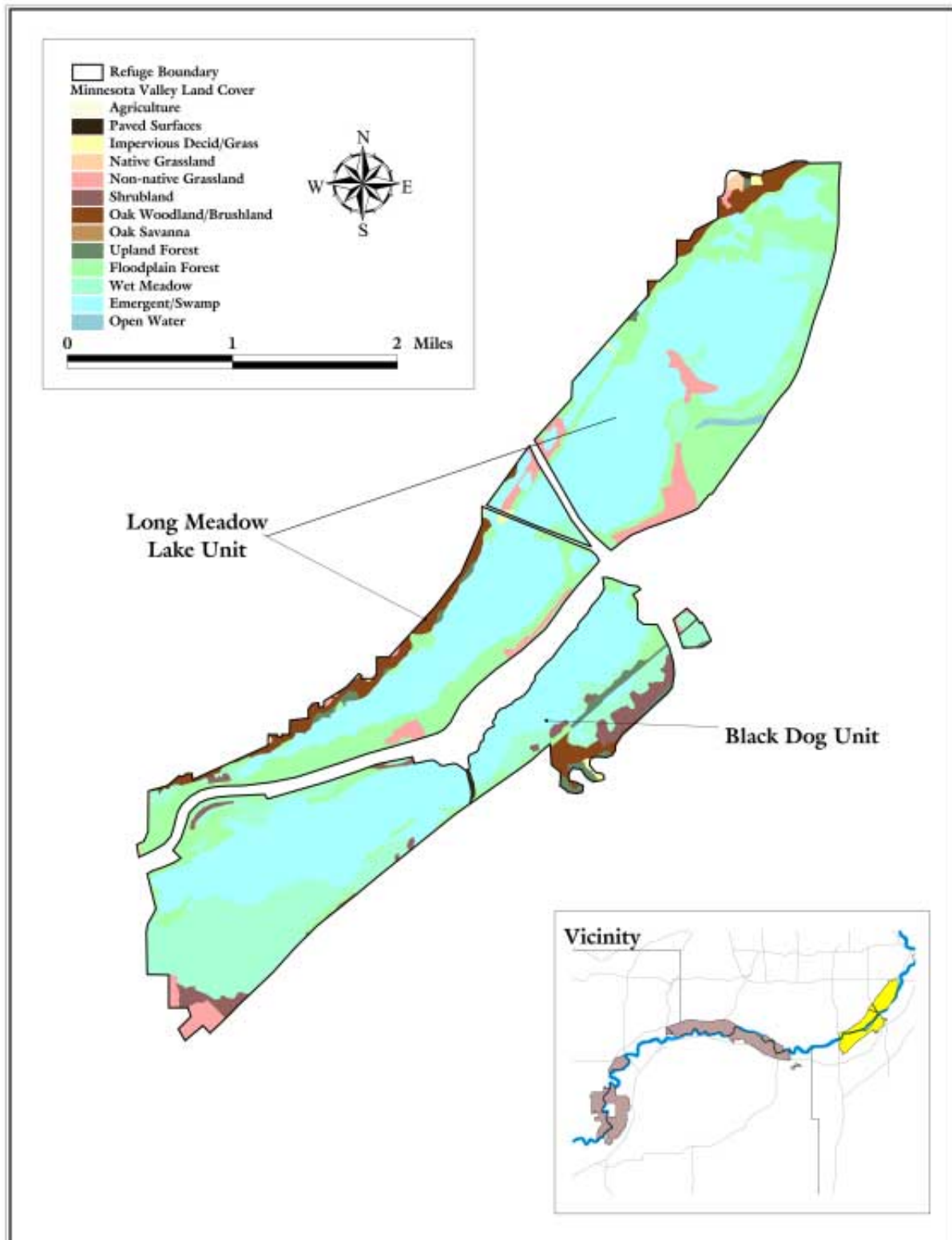


Figure 6: Existing Habitat (2002), Upgrala, Wilkie and Bloomington Ferry Units

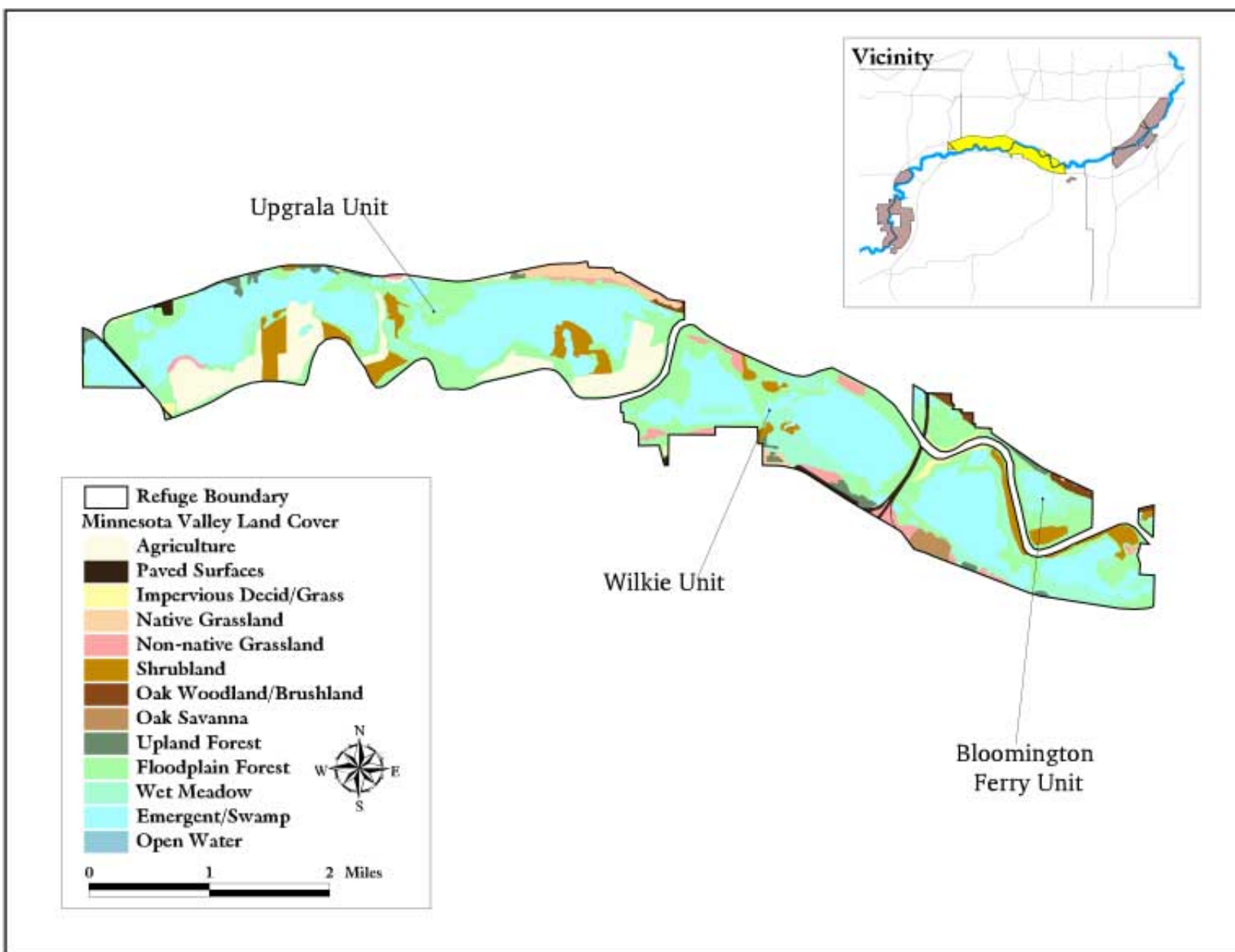


Figure 7: Existing Habitat (2002), Savage Fen Unit

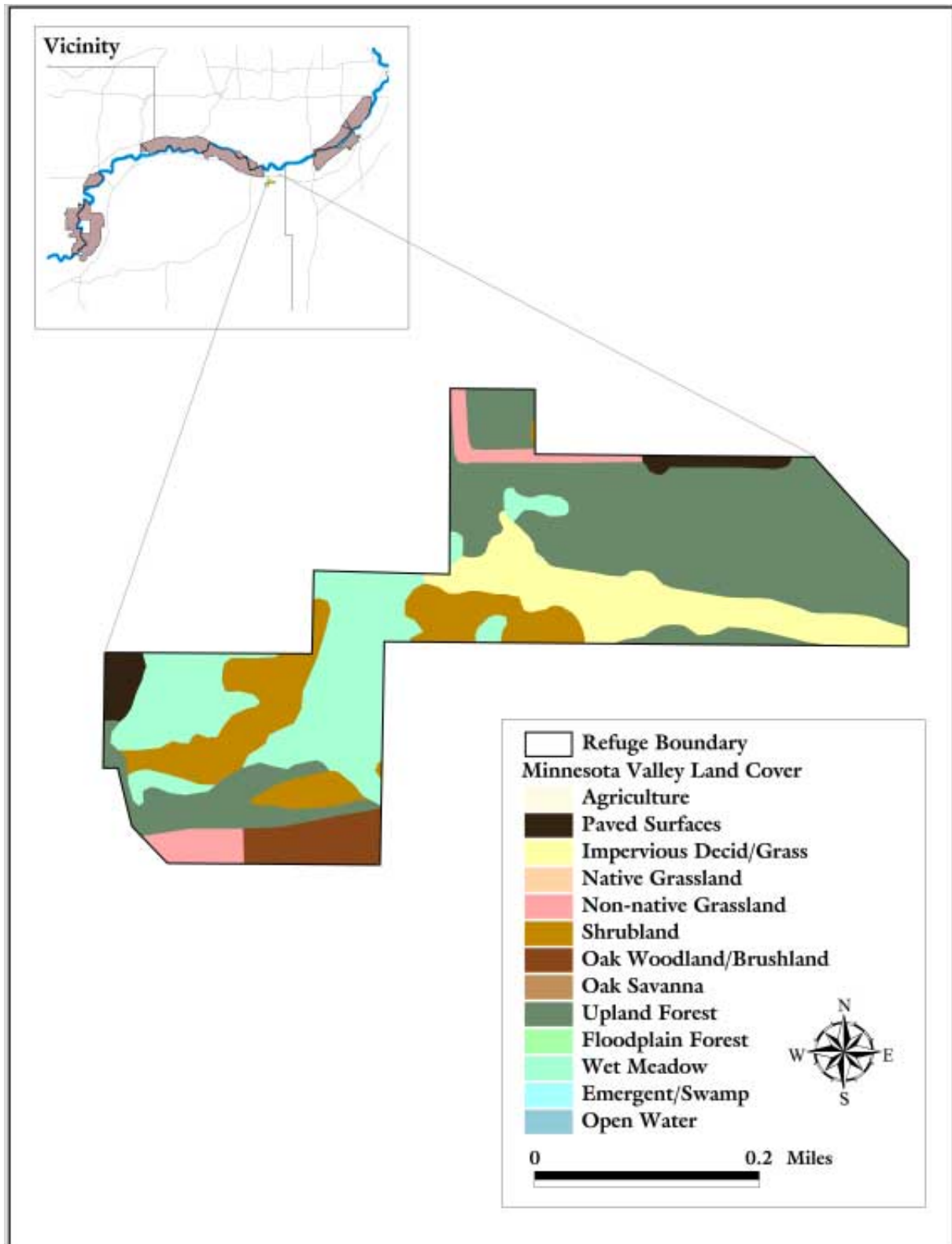


Figure 8: Existing Habitat (2002), Chaska Lake Unit

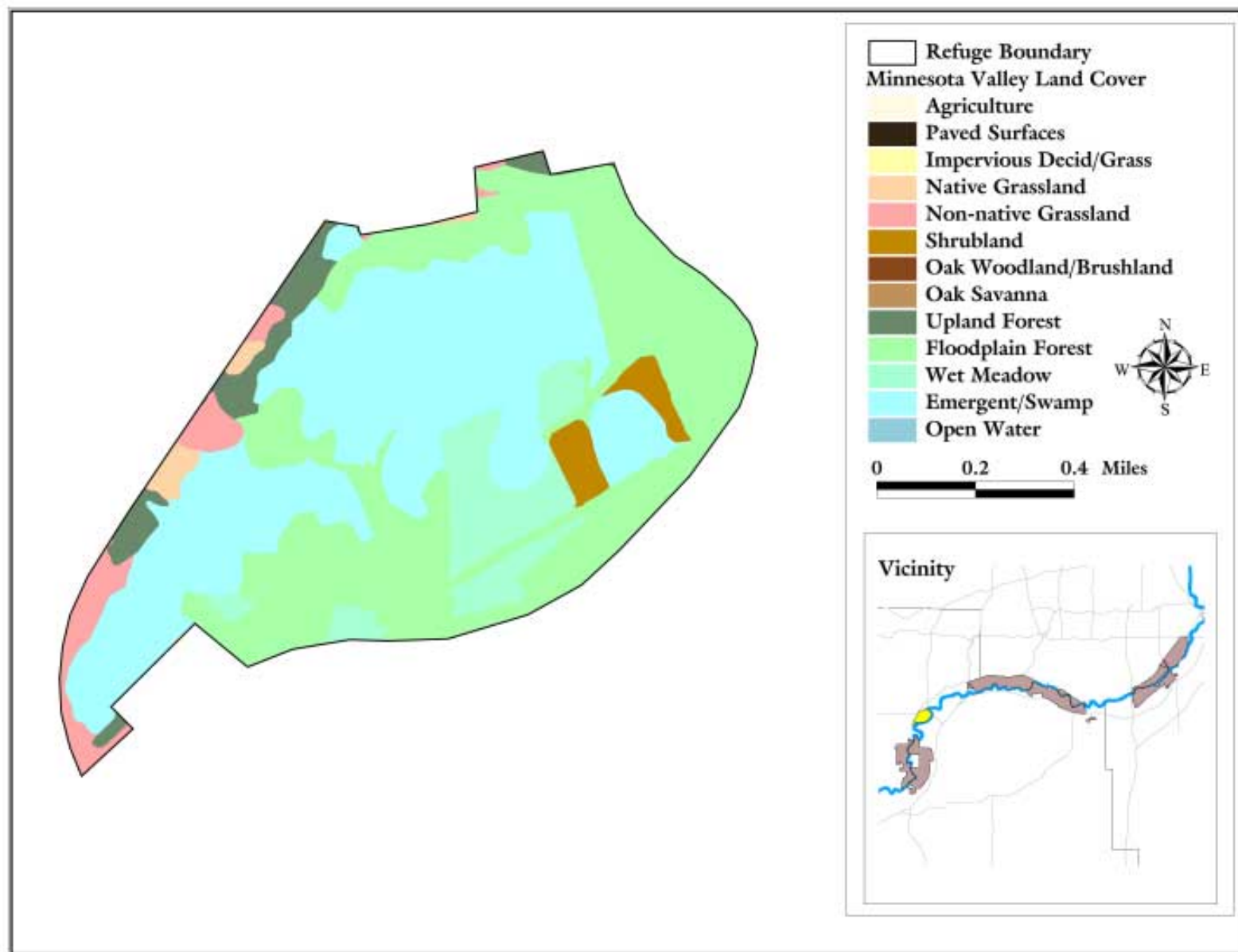
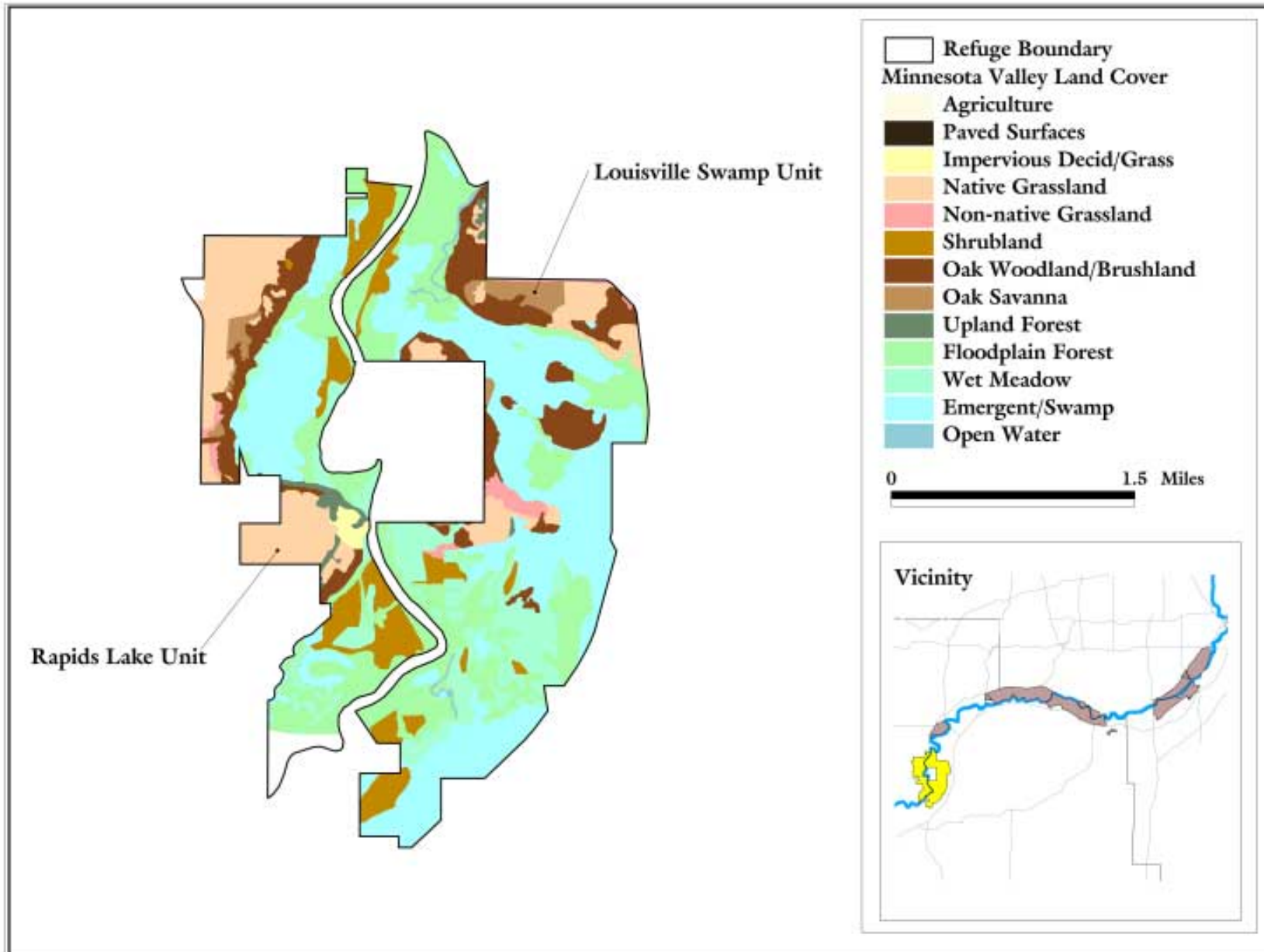




Figure 9: Existing Habitat (2002), Rapids Lake and Louisville Swamp Units





Water level management is the primary technique used to maintain the diversity and productivity of Refuge wetlands. Through periodic drawdowns, followed by subsequent reflooding, they support a variety of aquatic emergents and expose mudflats that attract good concentrations of waterfowl, waterbirds, and shorebirds.

Frequent fluctuations of the Minnesota River sometimes complicate the management of these large wetlands. For example, high river elevations during late spring and summer can prevent drawdowns and the germination of emergent vegetation. Likewise, prolonged or frequent flooding can destroy beneficial aquatic plants and

convert the area from a “hemi-marsh” community to open water wetland habitats with limited plant diversity. Fortunately, however, the long-term productivity of these wetlands can be maintained with a committed effort that is prepared to take advantage of drawdowns and other management opportunities when they occur. Water control structures designed to keep the low bounces of the Minnesota River out of these wetlands also enhance the success of this management. An active water management program also helps to decrease rough fish populations that exist in many of these riverine wetlands.

As indicated earlier, three moist soil management units have been constructed on the Refuge since its inception. All of these units were constructed as mitigation for a development project that impacted Refuge lands to some degree. Unfortunately, these units have not functioned as planned due to a number of factors, including permeable soils upon which they were constructed. The long-term plan for these units is to convert them to green tree reservoirs as the adjacent floodplains are reestablished to a forest cover.

Management of calcareous and sedge fens that occur on the Refuge consists of periodic prescribed burning with hand removal of invading shrubs. Management is needed on these units to maintain favorable conditions for the rare and unique species that occur in these important ecological communities.

A water control structure and outlet ditch has also been installed on the Round Lake Unit, which is located in Arden Hills. The sediments of Round Lake include high concentrations of boron and chromium. Because of the potential to disturb these sediments and introduce heavy metal contaminants into the food chain, no active water level management of Round Lake is occurring at this time. However, the Service should maintain the option of actively managing the water levels in the future upon assurances that periodic drawdowns and reflooding would not cause undue risk to the ecosystem.

#### Floodplain Forests

No active management techniques, such as cutting for timber stand improvement, are planned for floodplain forested areas other than those that will perpetuate the development of old growth forest. As indicated previously, all former agricultural lands within the floodplain will be converted to forested habitat. Unbroken blocks of forest minimizes



the “edge” effect, a fragmented habitat condition that leads to increased predation rates for some nesting birds. Continuous forest also provides for a wildlife movement corridor along the Minnesota River.

#### Hillside Forests

The mixed deciduous forests that exist along the bluffs of the Minnesota River have an overstory of ash, elm, maple, white oak and basswood with an understory of dogwood, choke berry and other shrubs including European buckthorn, an exotic species. No active management techniques are planned in this plant community other than control measures for exotic species. The community will be allowed to continue to age into an old growth forest. Prescribed fire will be used only in those locations where there is an understory of grassland.

#### Oak Savanna

The Refuge contains some areas that were historically oak savanna. Nearly 200 acres of historic oak savanna exists on the Louisville Swamp Unit alone. With the cessation of wildfires, the open canopies of the oak savannas were gradually replaced with a closed canopy mixed deciduous forest. Upon removal of all but the bur oaks, and a series of prescribed burns, these oak savannas begin to take on their historic character. Long-term management of these areas includes periodic prescribed burns combined with occasional mechanical removal of unwanted trees and brush.

#### Grasslands

Refuge grasslands are limited primarily to remnant native prairie along the Minnesota River Bluffs and restored native grasses in former agricultural fields. The largest block of remnant native prairie on the Refuge exists along the Eden Prairie Bluffs and is characterized by a diversity of native grasses and forbs. Most of the Refuge’s restored native prairie is located on the Rapids Lake Unit (~300 acres) and on Waterfowl Production Areas.

Prescribed fire is the primary tool used to periodically invigorate these native communities and discourage the invasion of introduced cool season grass, noxious weeds, and shrubs. Over the past 10 years, Refuge staff have conducted well over 150 prescribed burns within an urban/wildland interface without a major accident or incident. However, the prescriptions for timing of these burns are very narrow because of safety concerns. Sometimes, delays due to unfavorable weather means that units cannot be burned on schedule. Grassland habitat quality can suffer because of subsequent fuel buildup and woody plant species invasion.



USFWS File Photo

A Fire Management Plan for the Refuge and District was prepared in 2002. These plans are required before conducting either prescribed burning or wildfire suppression. The plan describes in detail fire management objectives, strategies, responsibilities, personnel and public safety, monitoring of effects, fire planning, air quality and smoke management, and compliance with Fish and Wildlife Service fire management policies, including Section 7 of the Endangered Species Act. The plan is available at the Refuge Office for public review. In addition to the Fire Management Plan, each prescribed burn must have an individual plan that describes in detail the unit to be burned, objectives, weather parameters, safety, crew size, equipment, contingencies, and smoke management.

Smoke and the risk of fire escaping onto private property is a major concern for the public regarding the Service's use of prescribed fire. As noted, smoke management is a part of each unit burn plan and burns are not conducted if smoke drift will cause a safety hazard to traffic or adjacent private dwellings. Neighbors are notified prior to burns to ensure precautions in the event that some smoke drifts over residences. Burn plans are designed to minimize escape of fires onto private property through the use of fire breaks, and burning within strict weather parameters and fire behavior models. Each plan also describes contingency plans in case of fire escape, including pre-burn notification of local fire departments and other units of government such as MnDNR fire crews.

#### Exotic Species Control

Several exotic species exist on Refuge lands and have the potential to significantly affect the diversity and quality of important wildlife habitats. Most notable among these are leafy spurge, which has invaded Refuge grasslands, purple loosestrife in a few of the wetlands, and European buckthorn, which is prevalent in the understory of the oak savanna on top of the bluff and in the floodplain forest. Other exotics include Phragmites, Reed's canary grass, and a small amount of spotted knapweed.

An Exotic Species Management Plan was developed in 2000 and serves to document and organize Refuge efforts to control these species. Consistent with this plan, biological control is used wherever possible followed by mechanical removal of the plants. Chemical control of these exotics is only used as a last resort. Due to the widespread distribution of these exotics, the Refuge has chosen to place emphasis on the control of leafy spurge followed by purple loosestrife and European buckthorn.

To date, leafy spurge beetles have been released on the Upgrala Unit in cooperation with the U.S. Department of Agriculture and the Minnesota Department of Agriculture. Beetles have been released on most spurge sites on the Refuge. In addition, purple loosestrife beetles, including several different species, have been released on Refuge sites. Finally, European buckthorn has been removed by cutting on a limited basis.



USFWS File Photograph

#### **Habitat Management on the Wetland Management District**

The 14-county Wetland Management District is in the transition zone between the eastern deciduous forest and the tallgrass prairie. Consequently, lands acquired contain a variety of wetland, grassland, and forest habitats. Our primary objective for waterfowl production areas and easements is to restore and manage diverse, productive, and sustainable native

plant communities. As with Refuge lands, these habitats will be periodically managed to maintain their value to waterfowl as well as other wildlife species. It should be noted that several of the waterfowl production areas in the District are former agricultural lands that contained deciduous forests. Where this occurs, these lands are being restored to grassland-wetland complexes and primarily managed for waterfowl production and grassland nesting birds.

### Wetlands

A variety of wetlands occur on the Waterfowl Production Areas and easements within the District and provide important habitat for waterfowl, waterbirds, and associated species. Where possible, these wetlands are being restored to their historic levels. Due to challenging logistics associated with these scattered tracts, water control structures are only installed in rare instances.

### Grasslands

All former agricultural fields are converted to grassland to provide for good waterfowl and grassland bird nesting cover. A mixture of six species of native grass and 30 species of native forbs are generally used for these sites. Once established, prescribed burns are used to maintain the areas' vigor and value to wildlife.

### Oak Savanna

A small amount of oak savanna occurs on a few Waterfowl Production Areas. Most of these areas have been identified and will be restored to historic communities as time and resources permit. As with grasslands, prescribed burns will be used on these areas periodically to maintain their diversity and wildlife values.

### Forests

Small stands of eastern deciduous forest occur on some Waterfowl Production Areas that provide some limited habitat for forest birds. No active management is contemplated in the foreseeable future for these forests.

## **Habitat Management: Private Lands Program**

The Partners for Fish and Wildlife Program is very important to Minnesota Valley National Wildlife Refuge and its District since significant wetland, riparian and grassland habitats have been restored throughout the area. The seamless implementation of Refuge, District, and Partners programs also serve to restore and protect an array of wildlife habitat located in uplands as well as in the floodplain. These restorations provide excellent production and migration habitat for area wildlife and serve to strengthen community support for wildlife conservation issues.

In addition to numerous successful habitat restorations since 1987, this program has fostered excellent relationships between the Service and many local partners including the MnDNR, the Natural Resource Conservation Service, the Metropolitan Council, soil and water conservation districts, conservation clubs and organizations and, most importantly, private landowners. Service private lands biologists, working out of this office, serve to "broker" the programs of others with the common goal of restoring and protecting additional wildlife habitats on private lands.

## **Fish, Wildlife, and Plant Monitoring**

The monitoring of fish, wildlife, and their habitats at the Refuge and District is conducted to provide information that is used to make management decisions and support statewide and national conservation efforts. The Resource Inventory Plan, which contains protocols for all monitoring, inventories, surveys and investigations, is the foundation of the biological program for the Refuge and District. Among other items, each protocol de-

scribes its purpose, methods, study area, data analysis, and data storage. Within the Plan, the protocols are organized into one of three categories. These categories are Baseline Information, Management Monitoring, and Cooperative Projects. It should be noted that the Resource Inventory Plan is a living document that is constantly subject to change and improvement. Fish, wildlife, and plant monitoring activities currently existing on the Refuge and District are summarized in the following paragraphs.

*Bald Eagle Inventory:* All Bald Eagle nests on the Refuge are monitored monthly by staff and volunteers to obtain basic habitat and phenology data. All information is shared with the MnDNR Nongame Program, which monitors nesting activity throughout the state.

*Colonial Bird Surveys:* The Wilkie Unit supports a large Great Blue Heron/Great Egret colony on the west shore of Blue Lake. Winter nest and summer nestling counts are conducted annually to monitor trends in the breeding population and reproductive success of the colony. The number of Double-crested Cormorant, Green Heron, and Black-crowned Night Heron nests are also recorded.

*Point Counts for Songbirds:* This protocol was developed to document the non-game bird species that are using mature floodplain forest located on the Refuge.

*Frog and Toad Calling Survey:* Frog/toad calling surveys are conducted annually at specific Refuge units to determine population status and diversity. The survey methods were adopted from the North American Amphibian Monitoring Program. The data collected is shared with Minnesota Frog Watch, which administers the Minnesota frog/toad survey efforts.

*Marsh Birds:* These species are surveyed using a modified version of the Marsh Monitoring Program developed by Bird Studies Canada. Every 5 years play back is used to detect the presence of Virginia Rails, Sora, Least Bitterns, American Bitterns, Pied-billed Grebes, King Rails, Common Moorhens, and American Coots.

*Muskrat and Beaver Lodge Index:* Muskrat numbers are monitored annually on select Refuge Unit marshes using winter ground count methods to estimate reproductive success. House counts are conducted and occupancy confirmed, via temperature probes, during winter months when ice thickness permits safe foot travel. Beaver lodges are also noted during the muskrat surveys.

*Waterfowl:* Waterfowl surveys are conducted monthly (biweekly during migration) on specific wetlands throughout the Refuge. The data are used to provide managers and the public with current information on the distribution and abundance of waterfowl using the Refuge, and to identify annual trends in waterfowl use.

*Waterbird Inventory:* Waterbird counts are conducted in conjunction with waterfowl surveys and provide information about distribution and relative use of Refuge wetlands.

*Invertebrates:* Recently, Refuge volunteers began compiling a list of lepidopterans (butterflies) found in the Refuge as well as a voucher collection to be used in the Refuge Visitor Center. Most of the survey data and collecting efforts were conducted in the Louisville and Rapids Lake units of the Refuge with hopes to expand the effort to other parts of the Refuge.

*Vegetative Cover Mapping:* Refuge units and District lands have been mapped according to the Minnesota Land Cover Classification System that was recently developed by the MnDNR in cooperation with many others. The classification system is a five-level hierarchical design, permitting a gradation of refinement relevant to any land cover mapping project. This system is valuable in an urban interface because it combines vegetative cover mapping with the mapping of artificial and impervious features.

*Louisville Swamp Oak Savanna:* A long-term monitoring plan is in place to track changes in the flora and fauna communities before and after management actions are conducted. The purpose is to assist in determining the success of the oak savanna restoration efforts on Louisville Swamp.

*Rapids Lake Oak Savanna:* A long-term monitoring plan is in place to track the vegetative changes that occur in response to oak savanna restoration efforts on the Rapids Lake Unit.

*Purple Loosestrife:* The Refuge has developed a monitoring protocol to evaluate the success of *Galerucella* beetles released on wetlands within areas of high purple loosestrife infestations. This monitoring will continue as additional beetles are released wherever this exotic plant occurs.

*Native Prairie Fire Management:* This protocol is currently being developed and it will monitor the effects of prescribed burning on a select sample of original native prairie.

*Restored Prairie Fire Management:* This protocol is currently being developed and it will monitor the effects of prescribed burning on a select sample of restored prairie habitat.

*Leafy Spurge Biological Control:* This protocol was developed to monitor the effects of releasing leafy spurge beetles on the Upgrala Unit of the Refuge.

*Water Quality:* This protocol is currently being developed and it will focus on obtaining baseline information and long-term water quality trends for Long Meadow Lake. A variety of water quality parameters will be sampled on a periodic basis. Once completed, this protocol will standardize the methodology the Refuge will use to monitor water quality at other locations.

*White-tailed Deer Surveys:* In an effort to determine the distribution and density of whitetail deer in the Twin Cities area, the MnDNR conducts an annual winter deer survey; a portion of this survey is conducted on Refuge lands. This information is used to estimate Refuge deer populations and to determine the effectiveness of deer control efforts.

*Gypsy Moth Trapping:* In cooperation with the U.S. Department of Agriculture, gypsy moth traps at several locations on the Refuge are used to determine the occurrence of this species. No gypsy moths have been discovered on Refuge lands since this cooperative program was initiated in 1991.

*Mid-Winter Waterfowl Survey:* In cooperation with the MnDNR, Refuge staff conduct a mid-winter waterfowl survey to assist in determining waterfowl distribution and habitat utilization throughout the nation. A total of 63 sites located throughout the Twin Cities area are surveyed in January of each year.

*Predator and Furbearer Scent Post Surveys:* This survey is conducted annually to determine the relative distribution and abundance of these species on Refuge lands. In addition, this information is provided to the MnDNR for incorporation into that agency's statewide database.

## **Public Recreation, Environmental Education and Outreach**

The second component of the Refuge's mission identifies the need to develop high quality wildlife-dependent recreation and interpretive programs for Twin Cities residents. Consequently, a variety of hiking trails, interpretive trails, and related facilities have been developed over the years. Most of the river units of the Refuge are connected to the Minnesota Valley State Trail, which is authorized to be constructed from Fort Snelling upstream to LeSueur. At the time of this writing, there is a movement among conservation organizations and trail users to extend the Minnesota Valley State Trail along the full length of the Minnesota River. This proposal will likely be considered by the Minnesota State Legislature in the near future.

The visitor center, which is located in Bloomington, is a main attraction of the Refuge and serves as a welcoming and orientation site for Refuge visitors. The 32,000-square-foot facility was opened to the public in September 1990 and contains nearly 8,000 square feet of exhibit space, a 120-seat auditorium, two multi-purpose educational classrooms, a resource library, a hearth room, a bookstore, administrative offices, a service garage and storage space. An observation deck is located opposite the main entry of the building. Parking is provided for 125 cars and buses.

An art gallery is also administered within the Visitor Center for local artists to display their natural resource related works. On an annual basis, approximately 10 artists are provided this opportunity.

In addition to environmental education and interpretive programming, the Visitor Center and its equipment are used to a limited degree by non-profit organizations for their monthly meetings. These groups include the Friends of the Minnesota Valley, the Minnesota River Valley Audubon Chapter, the Minnesota Nature Photography Club, and the Native Plant Society.

Estimated Refuge visitation ranges between 250,000 and 300,000 each year. Visitors enjoy a variety of activities including priority public uses such as hunting, fishing, wildlife observation, wildlife photography, wildlife interpretation, and environmental education. General visitation at the Visitor Center peaked out at nearly 53,000 in 1991 but has since declined to less than 25,000 each year.

The Waterfowl Production Areas located in the District also provide local communities with the opportunity to participate in wildlife-dependent recreation and environmental education. All Waterfowl Production Areas are open to hunting and fishing consistent with state regulations. Soberg Waterfowl Production Area is closed to the use of single projectiles (rifles and shotgun slugs) due to safety concerns and a City of Lakeville ordinance.

To a limited degree, Waterfowl Production Areas are used by the general public for bird watching, wildlife interpretation, and environmental education. A good potential exists to



develop quality environmental education curriculums, consistent with State graduation standards, for use by rural schools on nearby Waterfowl Production Areas.

The Minnesota Valley Wetland Management District is one of seven Districts within Minnesota that combined administer nearly 800 Waterfowl Production Areas. The visiting public, neighbors, local units of government, and the MnDNR benefit when management and permitted uses on Waterfowl Production Areas are consistent from one end of the state to the other. This Comprehensive Conservation Plan provides the opportunity to articulate policies that have been in place for many years but have not always been consistently applied or communicated. New national policies and regulations governing management and use of the Refuge System also prompted a review and fine tuning of what uses will and will not be allowed, and the stipulations all Districts will follow when allowing certain uses.

A summary of generally prohibited and permitted uses and activities on Waterfowl Production Areas in Minnesota is provided below. For each of the permitted activities, the reader is encouraged to review the separate compatibility determinations found in Appendix D. Stipulations or operating guidelines are provided in most compatibility determinations. Except where noted, these rules also apply to lands within the Refuge Units.

#### Public Uses Generally Prohibited

- Off-road vehicle use, including snowmobiles and ATVs (except on State Trail)
- Camping
- Open fires
- Discharge of firearms except during State hunting seasons
- Use of motorized water craft
- Dog trials
- Horseback riding (except on State Trail)
- Commercial bait collecting
- Beekeeping

#### Public Uses Permitted

*(See Compatibility Determinations in Appendix D)*

- Hunting in accordance with Refuge-specific seasons and regulations
- Wildlife observation
- Photography
- Fishing in accordance with State seasons and regulations
- Environmental education
- Interpretation for individuals or groups
- Trapping in accordance with State seasons and regulations (permit required on Refuge)
- Berry and nut collecting for personal use
- Limited plant and seed collection for decorative purposes

(Note: These uses include the use of non-motorized means of access including hiking, snowshoeing, cross-country skiing, or where appropriate, bicycling on existing trails.)

#### Generally Permitted Management Activities Done by Others, and Miscellaneous Activities/Programs

- Haying for grassland management
- Farming for grassland management
- Timber or firewood harvest
- Food plots and feeders for resident wildlife
- Wildlife nesting structures
- Archaeological surveys
- Special access for disabled users
- Irrigation travelways across easement wetlands
- Temporary road improvement outside of existing right-of-way
- Special dedications/ceremonies
- Wetland access facilities
- WPA parking facilities
- Local Fire Department Training – Prescribed Burning
- Local Fire Department Training – Burning of Surplus Buildings on New Acquisitions

#### Other Reoccurring Uses Handled on Case-by-Case Basis

- Grazing for grassland management
- New or expanded rights-of-way requests
- Ditch or channel maintenance to facilitate waterflow
- Major new facilities associated with public uses
- Commercial filming
- Special events
- Animal collecting requests
- Other requests for uses not listed above

#### Hunting

Various forms of hunting are allowed in selected units of the Refuge. Portions of the Wilkie Unit and all of the Louisville Swamp and Rapids Lake units are open to archery deer hunting. Public hunting for waterfowl, small game, and turkey is permitted south of the Middle Road on the Louisville Swamp Unit. Waterfowl hunting is allowed on Rice Lake in the Wilkie Unit. In addition, the Rapids Lake Unit is open to public hunting in accordance with state regulations.

#### ***Youth Waterfowl Program***

The Refuge in cooperation with the Minnesota Waterfowl Association and other partners sponsors a youth waterfowl hunting program each year. The purpose of this program is to teach youth how to hunt waterfowl both ethically and safely. In addition to teaching young people waterfowl hunting techniques, the instructors also provide information about wildlife conservation, wetland ecology, and regulations. Following classroom instruction, the youth are provided the opportunity to trap shoot with their patterned shotguns, and to hunt on Refuge lands in the presence of their mentor. This is a popular program its goal is to instruct 30 young people annually in the art and science of waterfowling. A wild game recognition dinner is normally held each winter following the hunt.

### ***Hunting for Physically Challenged***

Each year, Capable Partners, Inc. is granted a special use permit to conduct waterfowl hunting on the north shore of Rice Lake of the Upgrala Unit for hunters with disabilities. The Refuge has provided wheel-chair accessible blinds, a boat dock, and an access road. Over the years, this partnership has provided some unique experiences to outdoor enthusiasts who normally do not have the opportunity to hunt or access to public hunting lands.

### Fishing

The Refuge offers a variety of opportunities for anglers. The most popular spots are from the banks of the Minnesota River on the Long Meadow Lake and Black Dog units where catfish and carp are the most common catch. The Bass Ponds also offer anglers an opportunity to try their luck. Over the past few years, the Refuge has seen a significant increase in fishing by immigrants. Hispanics in particular commonly use the Refuge in addition to members of the Russian and Hmong communities. Due to significant sources of contamination, Refuge signage and officers inform the Minnesota River anglers about the dangers of eating fish caught from these waters. Spanish language fishing regulations as well as consumption advisories are available to assist with this effort.

Since 1994, two wheel-chair accessible fishing docks have been constructed, one at Cedar Pond and one at Youth Fishing Pond. These facilities provide an opportunity for members of the disabled community to participate in fishing activities.

### ***Youth Fishing Day***

The Refuge and several of its partners host an annual Youth Fishing Day at the Bass Ponds for inner city and community youth. This is a very popular program in which 200 young people and their families enjoy learning about proper and ethical angling techniques. Many partners, including the Red Lake Nation and Gander Mountain, Inc., have helped make this event successful year after year.

### Wildlife Observation

The Refuge is a popular destination for visitors seeking opportunities for observing wildlife in their native habitats. The Minnesota River Valley, including the Refuge, is regionally known as an excellent bird watching location, especially during spring and fall migrations. Species ranging from warblers to Wood Ducks to Bald Eagles are commonly observed in the Refuge's diverse habitats. Other visitors enjoy observing resident wildlife such as white-tailed deer, beaver and, on occasion, river otter.

To the degree possible, the Refuge cooperates with the Minnesota River Valley Audubon Chapter and others to promote wildlife observation activities. Several members of this Chapter organize bird watching trips that involve visits to various portions of the Refuge. Likewise, the Refuge is working with Audubon and others in establishing a Minnesota River Birding Trail, which will have several stops on or near the Refuge.

### Wildlife Photography

Consistent with the opportunities to view wildlife, many visitors also take the opportunity to photograph these critters and their associated habitats. These photographers, who have access to most portions of the Refuge, take advantage of early mornings and late evenings to shoot photographs. Due to periodic flooding of most Refuge lands, no



permanent photo blinds have been constructed. On the other hand, an opportunity does exist for the use of portable photo blinds that can be removed prior to the spring floods.

Over the year, numerous volunteers and neighbors have obtained some extraordinary photographs of Refuge wildlife and scenery. These people have graciously shared their photographs with the Refuge and they have become invaluable in the development of brochures and publications.

#### Wildlife Interpretation

The primary interpretive theme for the Refuge is described by asking the pivotal question of "How Should We Live Together?" This concept was formulated in 1992 under contract and explored the relationship of this urban refuge to its surrounding communities. This concept and the history, conservation, and importance of wildlife to our society are interpreted through a variety of mediums. The approximately 125 special programs conducted by Refuge staff or volunteer interpreters annually is the foundation of this interpretation. These programs, combined with Refuge brochures, Visitor Center exhibits, and interpretive nature trails, help the visiting public connect their lives with their natural environment. Nationally recognized special events such as International Migratory Bird Day, National Wildlife Refuge Week, and Earth Day are also conducted by Refuge staff to advance the public's understanding and knowledge of wildlife.

### **Environmental Education**

Environmental education is a very important Refuge activity and is conducted year-round in the Visitor Center, on the Refuge and, at times, in off-site classrooms. Public, private, and home schools from throughout the Twin Cities participate in these environmental education programs. In addition, the Refuge has provided programs to schools as far away as Stillwater, Rochester, and St. Cloud. Approximately 10,000 students participate each year with the majority of the students coming from elementary and middle schools. All programs are free of charge and they can be led by staff (park rangers) or by teachers. The curriculums consist of a variety of subject matters and are tailored to meet the needs of youth in pre-school on up to 12th grade. Refuge staff have also hosted educator workshops designed to assist teachers in meeting their school's environmental educational needs. A brief summary of the environmental education curriculum is summarized below.

#### ***Pre-school***

Since its inception in 1997, the pre-school program has been very popular with area daycare centers and pre-school facilities. More than 2,000 children, plus their parents and guardians, have enrolled in this program each year. The 1.5-hour programs expose the children to concepts such as migration, squirrel behaviors, wildlife habitat such as trees, and wildlife tracks and sign. Each program includes a story or activity, a take home craft project, and a hike.

### ***Kindergarten – 3rd Grade***

Created in 1999, the programs are curriculum-based with pre- and post-site activities. The curriculum contains five days of activities, one day being an 1.5-hour visit to the Refuge with a park ranger. Programs cover four topics: birds, insects, habitats, and the earth.

### ***4th – 12th Grade***

These 11 field-based programs focus on resource management issues and explore the Refuge from a wildlife biologist's perspective through biological surveys and observations. Among other activities, students learn how water quality affects the health of the Refuge by comparing the chemical, physical, and biological characteristics of Refuge wetlands through macro invertebrate and water sampling. Other topics include wildlife monitoring, prairie interrelationships, etc.

### Volunteer Contributions

Public interest in and concern for the natural environment are the seeds that grew into Minnesota Valley National Wildlife Refuge, and public commitment has proven lasting. Over the years, numerous volunteers have made significant contributions to the development, operations, and maintenance of the Refuge and its facilities. Most of these individuals share a great deal of passion for the fish, wildlife, and plant communities of this area. Volunteers have contributed in many different ways that range from teaching pre-schoolers the concept of migration, to inventorying reptiles and amphibians, and to the clean-up of building sites through the operation of backhoes and bulldozers. It almost goes without saying that volunteers are very important to the Refuge and the District and will continue to be for a very long time.

## **Airport Mitigation Projects**

### Background

Beginning in 1989, the Metropolitan Airports Commission (MAC) began to explore alternatives for expanding the operations of the Minneapolis-St. Paul International Airport. This action led to the preparation of an environmental impact statement that considered building a brand new airport or expanding the existing facility. Ultimately, the Minnesota State Legislature weighed in on this issue and directed MAC to construct a new north-south runway on existing airport property.

The new runway will be constructed on the west side of the airport roughly parallel to Cedar Avenue. Although the south threshold of the runway will be nearly 1 mile away from Refuge lands, the use of this runway will result in overflights, on average, every other minute between 500 and 1,000 feet above the river valley. The impact of these overflights to the Refuge and its various programs is significant. Although current literature is not conclusive concerning the impacts of overflights on area wildlife, there is no question that the noise generated from these flights will significantly affect noise-sensitive public use activities such as bird watching, environmental education, and nature hikes.

Following prolonged negotiations, the U.S. Fish and Wildlife Service agreed to a cash settlement of \$26,090,000 to compensate for damages associated to Refuge facilities and programs. As specified in the Minnesota Valley National Wildlife Refuge Funding Agreement dated September 14, 1999, a non-profit organization would be established to

administer these funds and to serve as a mitigation agent to work on behalf of MAC. In close coordination and cooperation with the Service, mitigation activities to be accomplished include but are not limited to:

- (1) Acquisition of a minimum of 4,090 acres of lands within the area identified as appropriate, and making such lands available for Refuge environmental education and wildlife-dependent recreational opportunities either through donation to the United States to be administered by the Service or its successor as part of the Refuge, or through a cooperative or other agreement for such use at no cost to the United States;
- (2) Construction and development of a visitor and education center on the Rapids Lake Unit or another suitable location approved by the Service or its successor for the Refuge; and
- (3) Construction of visitor access, environmental education, and wildlife interpretive facilities at suitable locations approved by the Service or its successor on Refuge lands.

On August 31, 2000, the Minnesota Valley National Wildlife Refuge Trust, Inc. (Trust) was formally established for the primary purpose of administering these funds and completing Refuge mitigation projects. Consistent with prior agreements, MAC transferred \$26,090,000 into the account of the Trust. The Trust's Board of Directors includes the refuge manager and a representative of the following organizations: Friends of the Minnesota Valley, Minnesota Department of Natural Resources, National Audubon Society, Minnesota Waterfowl Association, and the Minnesota River Joint Powers Board.

#### Use of Funds

As specified in the 1998 Memorandum of Agreement between MAC, the Federal Aviation Administration, and the Service, the cash settlement for damages to the Refuge are to be expended on mitigation projects for Minnesota Valley National Wildlife Refuge. As a general rule, the Trust will expend these funds as follows:

#### ***Land Acquisition – 60 Percent***

Approximately 60 percent of the Trust and earnings generated thereof will be spent on acquiring and restoring new lands for the Refuge within the Minnesota River Watershed. Additional Refuge units will be identified and of these, no fewer than 4,090 additional acres will be acquired from willing sellers using these funds. Up to 25 percent of funds designated for land acquisition may also be used to acquire high priority Waterfowl Production Areas within the watershed of the Minnesota River. Where possible, however, all land acquisition funds will be leveraged with those of other programs such as the Wetland Restoration Program (WRP), Conservation Reserve Enhancement Program (CREP), and Reinvest in Minnesota (RIM) to maximize the acreage made available for wildlife habitats as well as public use.

#### ***Public Use Facilities – 20 Percent***

Approximately 20 percent of the Trust and earnings generated thereof will be spent on public use facilities such as an environmental education center, trails, wildlife interpretive sites, and associated support facilities. Some of these facilities will be constructed on existing Refuge lands while the remainder will be placed on new lands acquired with mitigation funding.



### ***Planning and Operations – 20 Percent***

Approximately 20 percent of the Trust and earnings generated thereof may be spent on planning for new lands and facilities, plus the operation of the new environmental education facilities. It is expected that these funds will be invested for the long-term and in order to maintain its future purchasing power, an estimated 5 percent can be made available each year for planning and operations. As of 2001, up to \$250,000 of the Trust can be spent annually on these items. However, under no circumstances should funds from the Trust be used to replace or supplant the Refuge's existing operational funds.

It should also be noted that the Trust cannot initiate any mitigation projects without prior approval of the Service.

#### Specific Mitigation Projects

Included within this CCP are projects that have been designated as airport mitigation projects. They include the acquisition of lands, the construction of the environmental education center and interpretive facilities, plus intern housing and a Refuge residence. These projects are designated as airport mitigation projects either as "Strategies" or within the summary of projects within Chapter 5 of this document. In addition, a separate mitigation plan has been included as Appendix L.

### **Archaeological and Cultural Resources**

The Refuge Manager is responsible for applying several historic preservation laws and regulations to ensure that historic properties are identified and are protected to the extent possible within the Refuge's established purposes and the Refuge System mission. Early in project planning for all construction projects and other ground-disturbing actions, the Refuge Manager contacts the Regional Historic Preservation Officer to initiate the Section 106 process. The Refuge Manager also will inform and request comments from the public and local officials through presentations, meetings, and media notices. Public involvement may also be achieved as part of the environmental planning required by the National Environmental Policy Act of 1969.

Archeological investigations and collecting on Refuge and District lands are performed only in the public interest by qualified archeologists or persons recommended by the Governor working under an Archaeological Resources Protection Act permit issued by the Service's Regional Director. The Refuge Manager must also issue a special use permit. As of 2001, five archeological investigations have produced 4,000 artifacts from Refuge and District lands. Artifacts are or will be stored at the Minnesota Historical Society under a cooperative agreement. Artifacts are owned by the Federal Government and can be recalled by the Service at any time.



USFWS Photograph

Refuge staff take steps to prevent unauthorized collecting and violators are cited or other appropriate action is taken. Violations are reported to the Regional Historic Preservation Officer.

## Law Enforcement

Enforcement of Federal wildlife laws, as well as regulations specific to the Refuge System, is an integral part of Refuge and District operations. Law enforcement plays a crucial role in ensuring that natural and cultural resources are protected and that visitors encounter a safe environment, even within a major metropolitan area. The Refuge currently has two employees, one full-time and one collateral duty, who are commissioned to conduct law enforcement duties on Federal property. However, Federal law enforcement is a cooperative effort by many agencies in the region. Cooperative relationships and strategies have been developed with state conservation officers and all county sheriff departments in the area.

## Wilderness Review

As part of the CCP process, we reviewed lands within the legislative boundaries of the Refuge for wilderness suitability. No lands were found suitable for designation as Wilderness as defined in the Wilderness Act of 1964. The Refuge does not contain 5,000 contiguous roadless acres nor does it have any units of sufficient size to make their preservation practicable as Wilderness. Lands acquired for the Refuge have been substantially affected by humans, particularly through agriculture and transportation infrastructure.



USFWS File Photograph

## Future Management Direction: Where We Want To Go Tomorrow

### Goals, Objectives and Strategies

Goals, objectives and strategies for the Minnesota Valley National Wildlife Refuge and Wetland Management District were developed with the participation of many citizens, cooperating agencies, conservation organizations, and Refuge staff. The following pages describe the

goals established for major management areas, objectives for achieving those goals, and the specific strategies that will be employed by Refuge staff. The goals are organized into the broad categories of Biological, Land Protection, and Public Use.

### Biological Goals:

#### Goal 1. Floodplain Forest:

*To restore, protect, and maintain natural species diversity while emphasizing priority wildlife and plants characteristic of floodplain forests within the northern tallgrass prairie ecosystem.*

**Discussion:** The forested floodplain of the Minnesota River Valley provides migration and production habitat for several bird species that are significant locally or are included in the Region 3 Regional Conservation Priority list. These include the Red-headed Woodpecker, Red-shouldered Hawk and Wood Duck. Numerous songbird species nest within or migrate along floodplain forests. Bald Eagles also use floodplain forests on the

Refuge or throughout the Wetland Management District for either migration or nesting habitat. Wading birds, such as the Great Blue Heron and Black-crowned Night-Heron, nest in colonies within the floodplain. These colonial nesting sites are vulnerable to human disturbance and destruction by high winds. The endangered dwarf trout lily also occurs in floodplain forests within part of the Wetland Management District.

**1.1 Objective:** By 2017, provide 4,700 acres of floodplain forest along the Minnesota River and major tributaries to benefit Bald Eagles, cavity-nesting birds such as Wood Ducks, colonial-nesting wading birds and rare plant communities (Figures 10-13).

*Note:* The acreage estimate includes lands within the authorized boundary of the Refuge only. New Refuge Units along the Minnesota River would provide additional floodplain forest habitats.

*Strategies:*

- 1.1.1 Through research and investigation, determine the long-term viability of the floodplain forest community that exists on Refuge lands.
- 1.1.2 Employ a senior wildlife biologist (GS 11/12). This position will benefit all of the biological goals set forth in this CCP.
- 1.1.3 Continue to acquire important floodplain forests that provide valuable wildlife habitats within the Minnesota River Valley and throughout the Wetland Management District. Where possible, block sizes greater than 100 acres should be acquired.
- 1.1.4 Protect existing Bald Eagle nests and heron and egret nesting colonies from human disturbance throughout the breeding season.
- 1.1.5 Complete a forest management plan by 2005 that establishes long-term objectives for each block of floodplain forest that exists on Refuge Units.
- 1.1.6 Using native species from a tree nursery and root propagation methods, continue to restore no fewer than 100 acres of floodplain forest each year until all potential floodplain forest is restored.
- 1.1.7 Develop a root propagation nursery using local sources of tree species.
- 1.1.8 Develop and implement a floodplain forest monitoring protocol designed to assess restoration success, vegetative changes, and wildlife response.

**Figure 10: Future Habitat Conditions (2017)**  
**Long Meadow Lake and Black Dog Units**

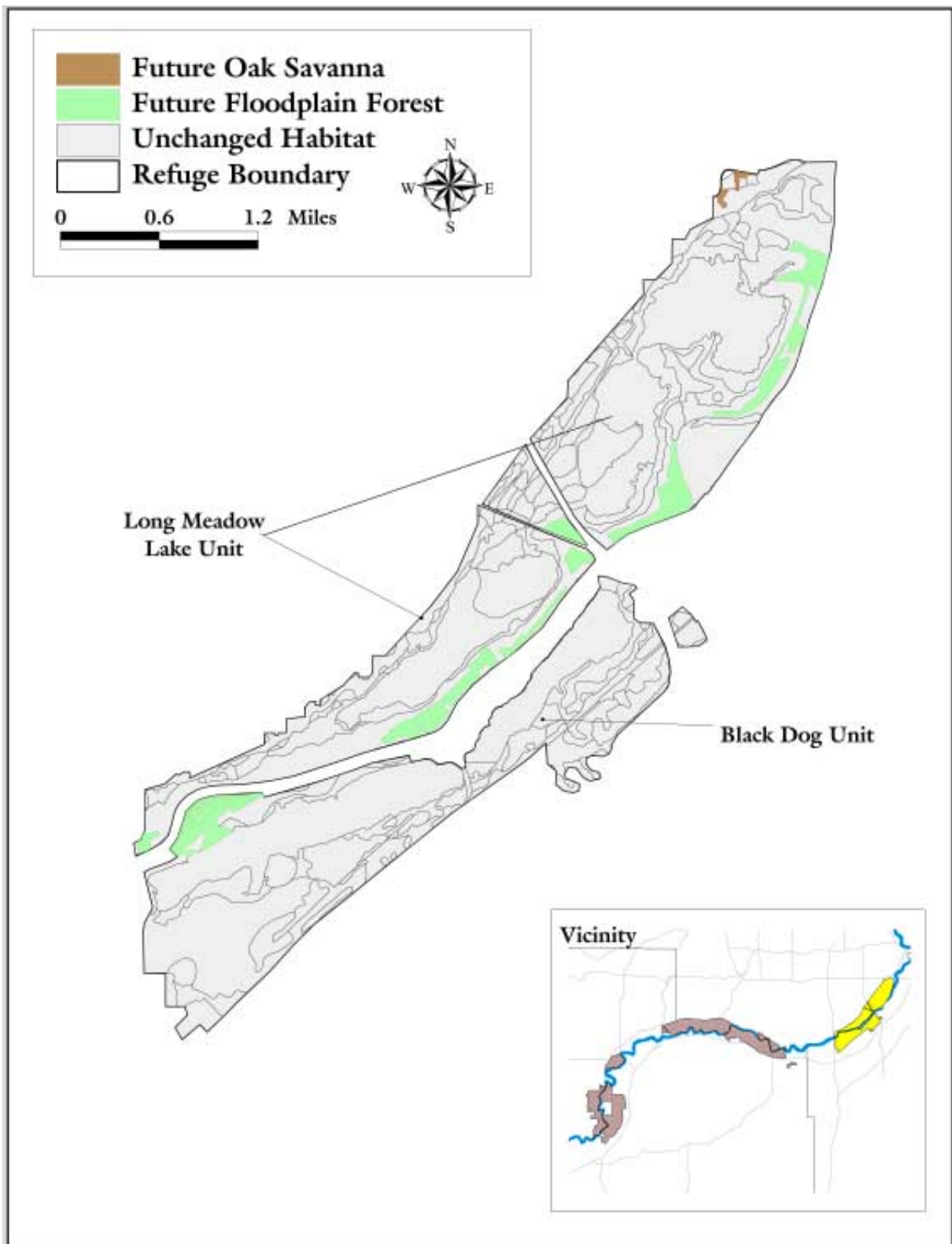


Figure 11: Future Habitat Conditions Upgrala, Wilkie and Bloomington Ferry Units

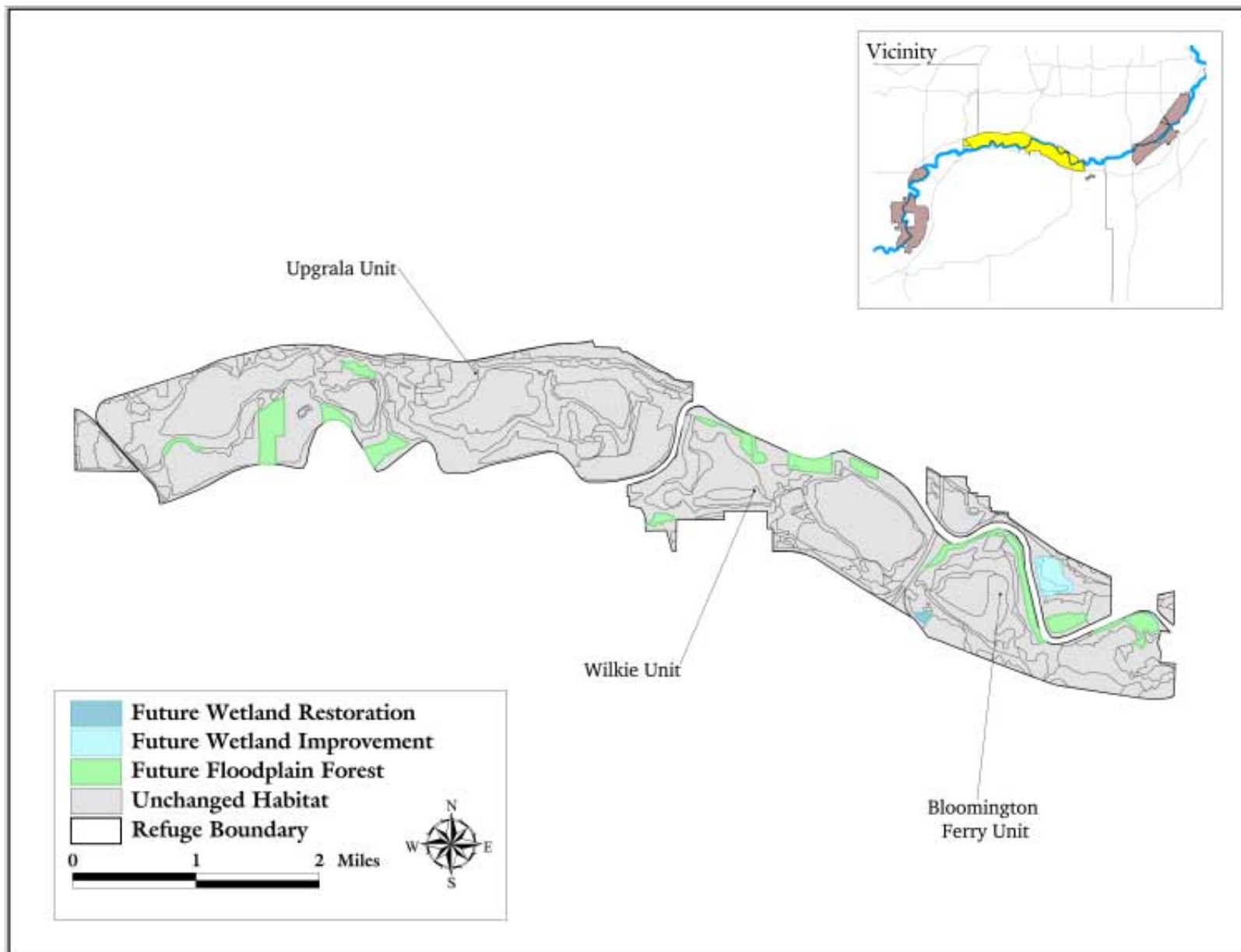


Figure 12: Future Habitat Conditions Chaska Lake Unit (2017)

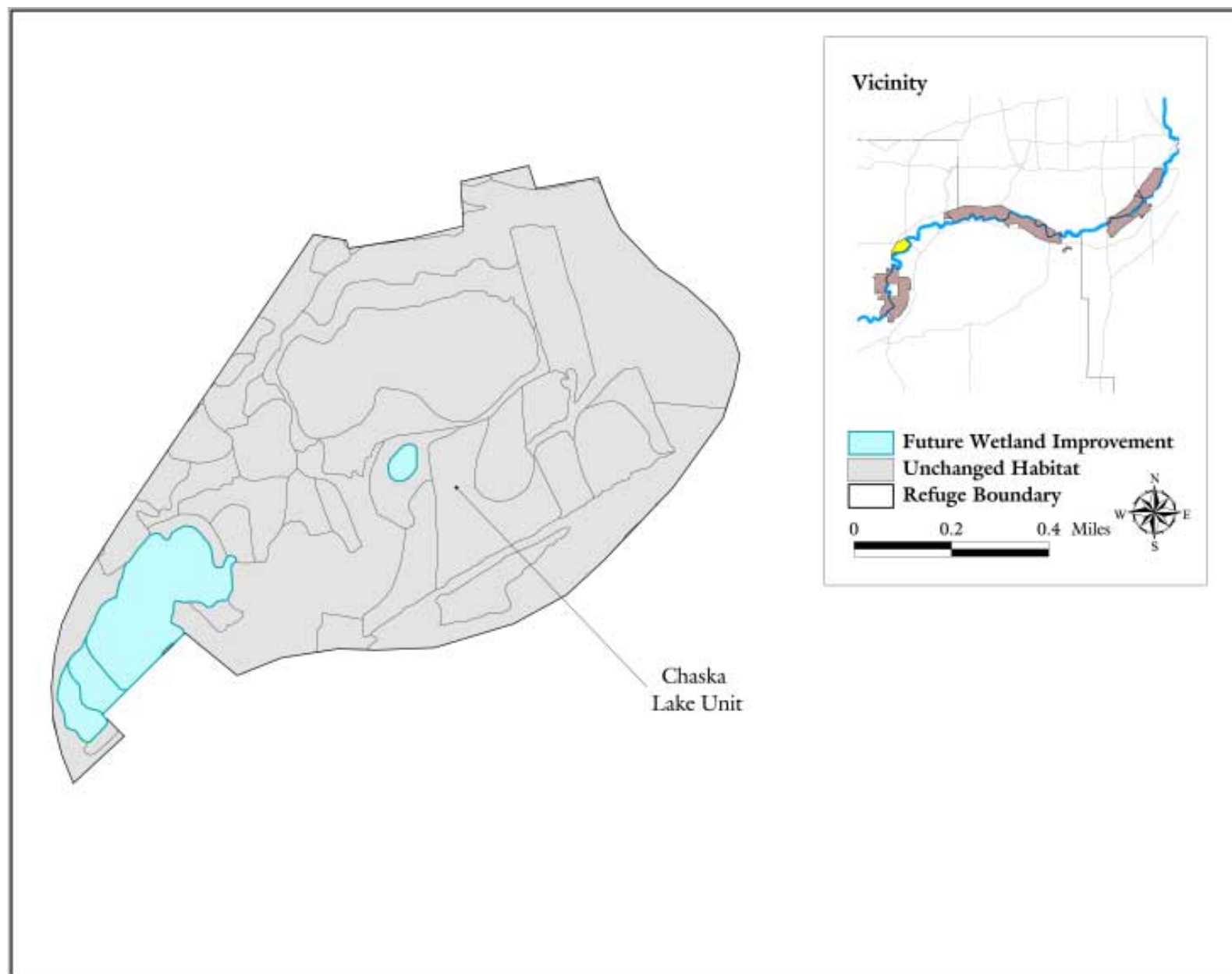
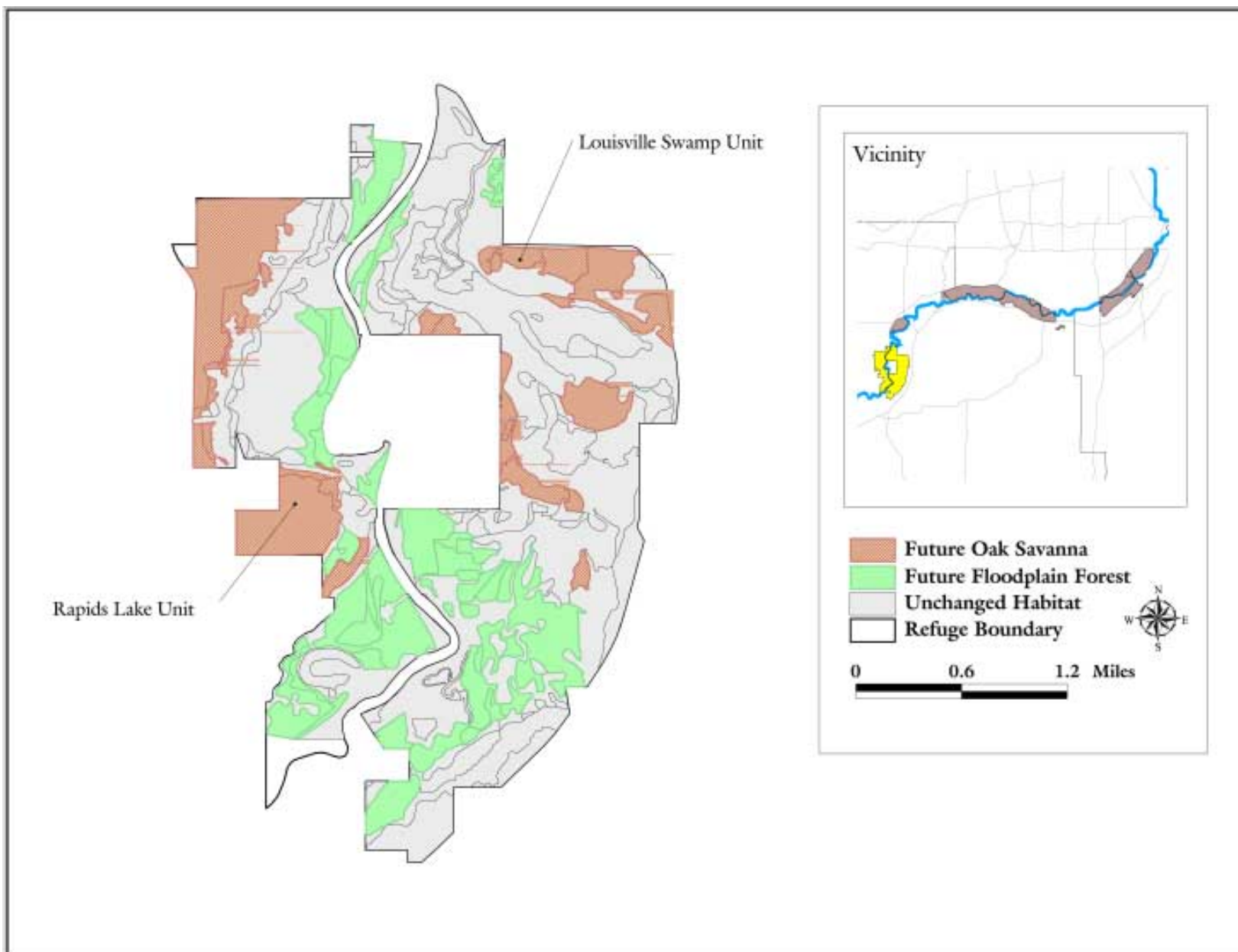




Figure 13: Future Habitat Conditions Rapids Lake and Louisville Swamp Units (2017)



Goal 2. Wetlands:

*To restore, protect, and maintain natural species diversity while emphasizing priority fish, wildlife and plants characteristic of wetlands within the northern tallgrass prairie ecosystem.*

**Discussion:** Refuge and District wetlands contribute migration and production habitat for waterfowl, waterbirds, and shorebirds. Several of these key species are regional conservation priorities including the Mallard, Blue-winged Teal, Canvasback, Wood Duck, American Bittern, and Black Tern. Other wildlife species of local significance that use these wetlands include Great Blue Heron, Great Egret, river otter, mink, muskrat and several amphibian species. Floodplain and riverine wetlands located on the Refuge also provide important spawning and nursery habitats for resident fish.

**2.1 Objective:** By 2017, provide 7,400 acres of wetlands within the floodplain of the Minnesota River and 4,600 acres of prairie pothole wetlands in the Wetland Management District to benefit priority waterfowl species, marsh, shore and wading birds and healthy aquatic ecosystems.

*Note:* The acreage estimates include lands within the authorized boundary of the Refuge and existing and future Waterfowl Production Areas. New Refuge units along the Minnesota River would provide additional wetland acres.

*Strategies:*

- 2.1.1 Maintain the productivity of Refuge wetlands through the installation of water control structures and the active management of water levels through an annual water management plan.
- 2.1.2 Continue to actively manage wetlands, wet meadows, and fens located on Refuge and Wetland Management District lands through periodic prescribed burning to control invasion of brush and other woody vegetation.
- 2.1.3 Continue to seek Environmental Management Program funding and other sources of funding to improve, maintain, restore, and manage wetland habitats on Refuge.
- 2.1.4 Develop monitoring protocols to determine effectiveness of wetland management actions upon vegetative diversity and use by wildlife.
- 2.1.5 Continue to acquire important wetlands and associated habitats for both the Refuge and Wetland Management District.
- 2.1.6 Manage and protect the Savage Fen Unit, in cooperation with the MnDNR and others, for as long as the Refuge administers the area.



Photograph by Scott Sharkey

- 2.1.7 Inventory aquatic species (fish and macro-invertebrates) in Refuge streams, creeks and lakes using volunteers, students, and Refuge staff. Biologists from the Service's Fishery Resource Office in LaCrosse, Wisconsin, will conduct sampling surveys at least once every 5 years to detect trends in fish abundance and distribution.
- 2.1.8 Restore Continental Grain berm along Eagle Creek to prevent creek degradation.
- 2.1.9 Develop and implement a comprehensive water quality monitoring program designed to obtain baseline information and document impacts of storm water events and other adjacent land uses upon Refuge wetland flora and fauna.
- 2.1.10 Initiate periodic surveys of waterfowl nesting on fee lands within the District.
- 2.1.11 Seek operational funds to employ up to two biological technicians (GS-404-5/7) to address the District's workload.
- 2.1.12 Obtain operational funds to employ a maintenance worker (WG-4749-6/7) to assist in restoring and maintaining Wetland District fee and easement lands.

**2.2 Objective:** Control and ultimately reduce the distribution of exotic plant species on wetlands primarily through biological control methods.

*Strategies:*

- 2.2.1 Continue to monitor and release purple loosestrife beetles into Refuge wetlands where purple loosestrife exists.
- 2.2.2 Control the spread of purple loosestrife using biological control methods such as purple loosestrife beetles (*Galerucella* sp.). In cooperation with others, establish a purple loosestrife field nursery to be used as a source of beetles for release on Refuge, Wetland Management District, and other suitable locations.
- 2.2.3 Within staff and time limitations, seek methods to reduce and control the presence of giant reed grass (*Phragmites*) that exists on Refuge lands.

**2.3 Objective:** Control wildlife populations at levels consistent with available habitat to address public safety concerns and to allow effective management of wetlands.

*Strategies:*

- 2.3.1 For aircraft safety reasons, continue to cooperate with the Metropolitan Airports Commission in the removal of Canada Geese from the Long Meadow Lake Unit.

- 2.3.2 Continue to use trapping as a management tool to control beaver populations.

**2.4 Objective:** Maintain Round Lake at full basin water level (2001 level) to provide migration habitat for Bald Eagles, waterfowl such as Canvasbacks, and Common Loons. Maintain the capability to actively manage water levels in the future upon assurances that periodic drawdowns and reflooding would not cause undue risk to the ecosystem.

**Discussion:** The 152-acre Round Lake Unit is adjacent to the dismantled Twin Cities Army Ammunition Plant in Arden Hills, Minnesota. The Unit is bounded on the west by industrial development and on the south and east by private homes. The deep sediments of the 120-acre permanent wetland have elevated concentrations of heavy metals including zinc, chromium, and cadmium. In addition, two storm water sewers enter Round Lake which may impact water quality.

The shallow lake is an open body of water and aquatic emergent plants are limited to a narrow fringe of cattail, slender bulrush, and water lily. An existing water control structure provides water level management capabilities and the potential for periodic drawdowns to enhance emergent plant growth for wildlife food and cover. However, water levels for Round Lake have been maintained at a constant level over the past 15 years due to concerns of neighboring landowners and the potential for exposing contaminated sediments.

*Strategies:*

- 2.4.1 Assist the U.S. Army and other agencies with studies to determine the threat, if any, of contaminants on aquatic communities.
- 2.4.2 Develop partnership with educational institutions in the area, such as the nearby Bethel College, to monitor water quality, migratory bird use and collect baseline wildlife data.
- 2.4.3 Maintain year-round closure of lake to fishing and boating.
- 2.4.4 Maintain the existing partnership with the City of Arden Hills to provide trail connection through the west side of the unit to complement the City's trail system and to facilitate wildlife observation.

Goal 3. Upland Forest:

*To restore, protect, and maintain natural species diversity while emphasizing priority wildlife and plants characteristic of upland forests within the northern tallgrass prairie ecosystem.*

**Discussion:** Upland forests, primarily those located along the bluffs of the river valley, provide migration and production habitat for several species of songbirds that are significant locally or are included in the Region 3 RCP list. Among these species are Red-

headed Woodpecker, Northern Flicker, and Loggerhead Shrike. Several locally or regionally significant raptors also use upland forests on the Refuge or throughout the Wetland Management District for either migration, nesting, and in some cases wintering habitat. These species include the Bald Eagle, Red-shouldered Hawk, and Long-eared Owl. The endangered dwarf trout lily also occurs in upland forests within part of the Wetland Management District.

**3.1 Objective:** By 2017, provide 1,000 acres of upland forest along the Minnesota River, in 50-acre or larger blocks throughout the Wetland Management District, to ensure migration and nesting habitat for Bald Eagles, Red-headed Woodpeckers and songbirds.

*Note:* The acreage estimates include lands within the authorized boundary of the Refuge and existing and future Waterfowl Production Areas. New Refuge Units along the Minnesota River would provide additional upland forest habitats.

*Strategies:*

- 3.1.1 Through research and investigation, determine the long-term viability of the upland forest community that exists on Refuge lands.
- 3.1.2 Continue to acquire upland forest habitats within the Minnesota River Valley and throughout the Wetland Management District. Block sizes greater than 100 acres should be a priority for acquisition.
- 3.1.3 Complete a forest management plan by 2005 that sets long-term objectives for each block of hillside forest that exists on Refuge Units.
- 3.1.4 Plant a shrub understory using native species from a tree nursery and/or root propagation nursery.

**3.2 Objective:** Control and ultimately reduce the distribution of exotic plant species on upland forests primarily through biological control methods.

*Strategy:*

- 3.2.1 To the extent possible, and with the use of volunteer and youth groups, seek to control and reduce the distribution of European buckthorn in forested areas through hand cutting and stump treatment with chemicals.

**3.3 Objective:** Control wildlife populations at levels consistent with available habitat to address public safety concerns and to allow effective land management.

*Strategy:*

- 3.3.1 In cooperation with the MnDNR and local communities, maintain whitetail deer populations at levels consistent with the carrying capacity of available habitat. Allow public



Photograph by Scott Sharkey

hunting where feasible and sharpshooting when needed to maintain populations of 15-25 deer per square mile.

Goal 4. Grasslands and Oak Savanna:

*To restore, protect, and maintain natural species diversity while emphasizing priority grassland-dependent wildlife and plants characteristic of the northern tallgrass prairie ecosystem.*

**Discussion:** Refuge and Wetland District grasslands, especially those within the uplands of Waterfowl Production Areas, have the potential to provide benefits for birds that require large blocks of grasslands for nesting success and population viability. Oak savannas, historically found throughout the Minnesota River Valley, also afford critical habitat for some of these birds. This is important because populations of many Region 3 Regional RCP “grassland” bird species, such as Bobolink, Grasshopper Sparrow and Eastern Meadowlark have shown steady declines over the last 35 years. Large grassland patches (over 250 acres), or smaller connected grasslands or those in proximity to other non-forested habitats, provide the best nesting conditions for many area-sensitive bird species. Larger grassland blocks will also increase the nesting success of RCP waterfowl such as Mallards and Blue-winged Teal. In addition, several reptile and butterfly species of Special Concern in the State of Minnesota, such as five-lined skink, racer, gopher snake and western hognose snake, and the Arogos, Leonardus, and Powesheik Skippers will benefit from native grassland management.

**4.1 Objective:** By 2017, provide 800 acres of original native prairie and 8,700 acres of restored native grasses in block sizes of over 50 acres and with varying grass height, density and grass/forb ratios to benefit grassland-dependent wildlife such as Boblinks, Grasshopper Sparrows and five-lined skinks.

*Note:* The acreage estimates include lands within the authorized boundary of the Refuge and existing and future Waterfowl Production Areas. New Refuge Units along the Minnesota River would provide additional native grasslands.

*Strategies:*

- 4.1.1 Maintain the vigor and productivity of Refuge grasslands by emphasizing the use of a progressive prescribed burning regime under the Fire Management Plan. On an annual basis, burn no less than 1,500 acres located on the Refuge and District.
- 4.1.2 Assess newly-acquired lands as to their suitability for conversion to native grassland and initiate appropriate conversion practices.
- 4.1.3 Monitor wildlife and vegetation response using procedures developed in the Refuge’s Inventory and Monitoring Plan.
- 4.1.4 Initiate or continue oak savanna restoration efforts on the Louisville Swamp, Wilkie and Rapids Lake units through



removal of unwanted trees and a progressive prescribed burning regime.

- 4.1.5 Establish prairie and forb nurseries using local ecotype seeds for harvesting and use in restoration of native prairie.
- 4.1.6 Identify hillside “goat” prairies on the Refuge and maintain or restore as necessary. Methods would include brush removal by volunteers and prescribed burning by trained staff.

**4.2 Objective:** Control spread and ultimately reduce the distribution of exotic or nuisance plant species on grasslands and oak savannas primarily through biological control methods.

*Strategies:*

- 4.2.1 Control spread of invasive woody plant species and noxious weeds using accepted methods such as mechanical, chemical and biological control.
- 4.2.2 Consistent with the Exotic Species Management Plan prepared for the Refuge, identify and map locations of all existing exotic species infestations.
- 4.2.3 Continue to release and monitor leafy spurge beetles at sites infested with leafy spurge.
- 4.2.4 Control the spread and distribution of spotted knapweed through the use of biological control methods.
- 4.2.5 In cooperation with the U.S. Department of Agriculture and the Minnesota Department of Agriculture, collect leafy spurge beetles that are not needed by the Refuge for release at non-Refuge locations.

Goal 5. Land Protection:

*To enhance the integrity of lands within the authorized boundary of the Refuge and contribute to the protection and restoration of fish and wildlife habitats within the Minnesota River watershed.*

**5.1 Objective:** By 2017, achieve the appropriate conservation status necessary for permanent protection and management viability of any remaining lands within the original authorized boundary.

*Strategies:*

- 5.1.1 Seek Congressional appropriations and other sources of funds to purchase the Upgrala tract plus any remaining lands within the original authorized Refuge boundary.

- 5.1.2 In cooperation with the State of Minnesota, seek to transfer the 54-acre Minnesota Department of Transportation (former Northwest Airlines) tract into the Refuge.
- 5.1.3 Consistent with early correspondence between the Regional Director and the Commissioner of Minnesota Department of Natural Resources, explore the possibility of exchanging Service ownership of the Savage Fen with other lands administered by the MnDNR.

## 5.2 Objective:

By 2017, and in cooperation with many others, contribute to the restoration of the Minnesota River by acquiring up to 36,000 additional acres of high quality fish and wildlife habitat within or adjacent to the Minnesota River Valley beyond the existing Refuge boundary and proceeding upstream to New Ulm, Minnesota.

*Discussion:* Local communities and state agencies have worked together for years to restore and protect the unique natural qualities of the Minnesota River Valley. Efforts within the last decade have focused on reducing the sediment and pollutant load within the river to make it “swimmable and fishable” as soon as possible. The Service would like to contribute to that effort. The river and its riparian habitat is important to Federal trust species such as waterfowl, migratory songbirds and endangered plants. Land acquisition for new refuge units, either in fee or through conservation easements, and subsequent habitat restoration is one way the Service can contribute to the collective goal of a clean river and abundant and healthy fish, wildlife and plant communities.

Numerous participants during the CCP public scoping process have encouraged us to consider land acquisition upriver. The environmental assessment included with this CCP (Appendix A) and Land Protection Plan (Appendix I) provide agency decision makers and the public with an analysis of management alternatives, including refuge expansion.

### *Strategies:*

- 5.2.1 From the amount identified above, use Trust funds to acquire no less than 4,090 acres in order to satisfy airport mitigation settlement requirements.
- 5.2.2 Make a concerted effort to leverage all land acquisition funding with those of other programs such as the Wetland Restoration Program, North American Wetlands Conservation Act (NAWCA), Conservation Reserve Enhancement Program, and Reinvest in Minnesota.
- 5.2.3 Work with the City of Bloomington to fully develop City property along the Minnesota River into good quality wildlife habitat. If advantageous to all, transfer such lands in fee title to the Refuge.

Photograph by Scott Sharkey



- 5.2.4 Enhance Refuge GIS capability for assessing impacts of adjacent or upstream land use on Refuge flora and fauna.
- 5.2.5 Continue to work cooperatively with cities, counties, developers, and others to correct existing impacts and to avoid future impacts to Refuge flora and fauna due to development of neighboring lands.
- 5.2.6 Work with Friends of the Minnesota Valley to increase landowner participation in private land stewardship through the Heritage and Corporate Registry programs.

**5.3 Objective:** By 2017, acquire, restore, and manage an additional 10,000 acres of fee and easement lands within the Wetland Management District.

*Discussion:* The Waterfowl Production Areas, wetland conservation easements and Farmer's Home Administration easements of the 14-county District provide habitat for nesting waterfowl and grassland songbirds, as well as public recreation opportunities, in areas that are often under widespread agricultural production or are subject to suburban growth. Established in 1994, the District is relatively new and opportunities abound for growth. The working relationship with local governments, conservation organizations and private landowners is very solid. The District grew an average of 500 to 1,000 acres per year through fee and easement acquisitions during the 5-year period ending in 2001. The District should strive to maintain the top end of this growth rate, if measured on a 5-10 year average, if adequate funding is available.

*Strategies:*

- 5.3.1 In cooperation with the MnDNR and private conservation organizations, delineate and submit acquisition proposals for no fewer than 750 acres annually.
- 5.3.2 In cooperation with the Natural Resource Conservation Service, identify high quality habitats where Wetland Reserve Program funds can be combined with Duck Stamp funds for the purchase of Waterfowl Production Areas.
- 5.3.3 Pursue all available sources of funds for land acquisition and habitat restoration including the Migratory Bird Conservation Fund, North American Wetland Conservation Act grants and private donations. A limited amount of Airport Mitigation funds could be made available for specific acquisitions.

**5.4 Objective:** On an annual basis, and in partnership with others, restore 1,000 acres of habitat located on private lands through the Partners for Fish and Wildlife Program.

*Strategies:*

- 5.4.1 Continue to work with other agencies and organizations in the restoration and protection of wildlife habitats. Where possible, continue to broker and assist with programs of others including the Wetland Reserve Program, Conservation Reserve Enhancement Program, Conservation Reserve Program, and the Reinvest in Minnesota Program.
- 5.4.2 Continue to closely work with Soil and Water Conservation Districts to assist in restoring and protecting wildlife habitats on private lands.
- 5.4.3 Continue to work directly with landowners on habitat restoration projects through the use of the Service's private landowner agreements.
- 5.4.4 Seek opportunities to obtain financial assistance and administrative support for field biologists within the Partners program through creative partnerships with conservation organizations and others.

**5.5 Objective:**

Protect the cultural, historic, and prehistoric resources of federally-owned lands within the Refuge and District.

*Discussion:* The overview study (Godfrey 1999) drew upon a substantial yet limited number of cultural resources reports for the Minnesota River Valley. Some 31 other studies cover portions of the Wetland Management District. Completed cultural resources surveys as reported in some of these studies have covered 1,500 acres of Refuge and District land. Eighty cultural resources sites have been identified or recorded on Refuge and District land. The vast majority of Refuge and District land has never been subject to a cultural resources survey and many more sites are expected to be located on this land.

The large land base and the presence of two large cities make a search of and comparison with the list of National Register properties a meaningless exercise for this purpose. Nevertheless, the Refuge is surrounded by numerous properties on the National Register including some right adjacent to the boundary. No sites in the Refuge have been nominated but several have been determined eligible and most of the others are considered eligible until determined otherwise.

*Strategies:*

- 5.5.1 Describe, identify and take into consideration all archeological and cultural values prior to implementing construction or other ground-disturbing projects. Notify the Regional Historic Preservation Officer early in project planning or upon receipt of a request for permitted activities.

- 5.5.2 By 2006, develop a step-down plan for surveying lands to identify archeological resources and for developing a preservation program to meet the requirements of Section 14 of the Archaeological Resources Protection Act and Section 110(a)(2) of the National Historic Preservation Act.

Goal 6. Public Use:

*To provide high quality wildlife-dependent recreational and environmental education opportunities to a diverse audience. These activities will promote understanding, appreciation and support for Minnesota Valley National Wildlife Refuge and the Wetland Management District as well as the entire National Wildlife Refuge System.*

**Hunting**

- 6.1 Objective:** Provide no less than 14,000 high quality hunting experiences for area residents per year. Seventy-five percent of hunters will report no conflicts with other users, a reasonable harvest opportunity and satisfaction with the overall experience.

**Discussion:** Providing opportunities for hunting is consistent with the Refuge and District mission and the National Wildlife Refuge System Improvement Act of 1997. Service-owned lands in the Refuge and District will be open to hunting, subject to state regulations and public safety concerns, where conflicts with other users will not occur, and where biologically feasible. Waterfowl Production Areas are mandated by law to be open to hunting subject to state regulations unless there is a significant safety issue. Where needed, Refuge staff will seek ways to ensure that hunters have the opportunity for high quality experiences.

*Strategies:*

- 6.1.1 By 2005 and in cooperation with the MnDNR, develop a plan to improve waterfowl hunting on Rice Lake of the Wilkie Unit. The plan will explore alternatives such as hunter education and the use of limited permits to improve the quality of hunting at this location.
- 6.1.2 By 2005, through revision of the Refuge Hunting Plan, examine opportunities to expand bow hunting for deer on the Refuge to assist in maintaining deer densities between 15-25 deer per square mile. Coordinate efforts with the MnDNR and cities adjacent to the Minnesota River Valley.
- 6.1.3 Maintain disabled hunting opportunities in cooperation with Capable Partners or another suitable organization. Expand disabled hunting opportunities to include turkey and deer in designated areas on the Refuge.



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- 6.1.4 Continue to improve the Refuge's youth waterfowl hunting program. Provide this opportunity to no fewer than 25 young people each year and seek to enroll disabled and disadvantaged youth plus youth of single-parent households located in urban areas.
- 6.1.5 Enhance public understanding of Refuge hunting opportunities by increasing the quality of maps, signs and wording within brochures and on the Refuge web page.
- 6.1.6 Increase the visibility of Refuge law enforcement and hunter adherence to federal and state regulations to ensure high quality, ethical hunting.
- 6.1.7 At least one parking lot will be developed on each Waterfowl Production Area to allow for hunting, fishing, and other wildlife-dependent activities.
- 6.1.8 Where appropriate, a Waterfowl Production Area entrance sign will be erected to recognize contributions from private conservation organizations and agencies.
- 6.1.9 Obtain operational funding amounting to approximately \$100,000 a year to employ a full-time law enforcement officer to enhance the Refuge's law enforcement and public use programs.
- 6.1.10 Each Waterfowl Production Area will be clearly posted to avoid any potential landowner/visitor conflicts.

## ***Fishing***

**6.2 Objective:** By 2005, provide for 6,000 high quality fishing visits per year to the Refuge by Twin Cities residents. Seventy-five percent of anglers will report no conflicts with other users and will recollect awareness that they were fishing on a national wildlife refuge.

**Discussion:** Bank fishing will be allowed on all Refuge lands where this activity does not interfere with wildlife conservation. Boating will continue to be restricted on Refuge-interior waterways other than the Minnesota River to reduce disturbance of migratory birds. The public will be encouraged to practice catch and release in light of the fish consumption advisories for the Lower Minnesota River.

### ***Strategies:***

- 6.2.1 Promote catch and release fishing opportunities on Refuge waters through the development and maintenance of good quality maps, signs, multi-lingual brochures, and the Refuge's web page. Ensure that the fishing public clearly understands the fish consumption advisories for the Lower Minnesota River through signs and brochures.

- 6.2.2 In cooperation with the MnDNR and the City of Bloomington, maintain existing boat ramp and parking facilities located at Lyndale Avenue. Likewise, cooperate with the City of Shakopee, the MnDNR, and others to develop an additional boat ramp near State Highway 101.
- 6.2.3 In cooperation with the MnDNR and Federal fish hatcheries, optimize Refuge fishing opportunities for youth and the disabled by annually stocking, in order of priority, Youth Fishing Pond, Cedar Pond, and Hogback Ridge Pond. Maintain the two existing accessible fishing piers at these locations.
- 6.2.4 In cooperation with other partners, continue to promote fishing opportunities for disadvantaged persons and others through activities such as Youth Fishing Day.

### ***Wildlife Observation***

**6.3 Objective:** By 2005, provide for 180,000 wildlife observation visits per year to the Refuge and Waterfowl Production Areas. Ninety percent of all visitors will report a memorable wildlife observation and that it occurred on land managed by the U.S. Fish and Wildlife Service.

#### *Strategies:*

- 6.3.1 Cooperate in the development of the Audubon-sponsored Minnesota Valley Birding Trail. Identify locations on Refuge units that would serve as wildlife observation stops for this trail.
- 6.3.2 With Refuge staff and/or volunteers, conduct no fewer than six birdwatching/wildlife observation programs for the public each year. In addition, conduct no fewer than two birdwatching/wildlife observation tours for disabled visitors per year. A portion of these wildlife observation tours will be conducted from canoes or other suitable water craft.
- 6.3.3 Upon the completion of the Minnesota Valley State Trail, explore the possibility of developing a wildlife observation tour of the Minnesota River Valley using a van or motorized tram.
- 6.3.4 Modify the Refuge web site to include current and accurate information about wildlife observations and opportunities available to the public. Link Refuge web site to other important wildlife observation web sites.
- 6.3.5 Maps and information describing Waterfowl Production Areas and their appropriate uses will be continuously updated on the Refuge's web site.



- 6.3.6 Establish state-of-the-art bird feeding stations at existing and future Refuge visitor centers. Manage these stations as dynamic exhibits that promote wildlife observation opportunities to the public.
- 6.3.7 Maintain strong partnership with the Minnesota River Valley Audubon Chapter and the Native Plant Society and continue to provide them monthly meeting space. Seek ways to coordinate organized wildlife and plant observation activities with those of the Refuge.

### ***Wildlife Photography***

**Discussion:** The Refuge will encourage wildlife photography at locations and times that do not conflict with wildlife conservation needs. Access to sensitive wildlife habitats and seasonal concentration areas, such as wading bird nesting colonies and Bald Eagle nest sites, will continue to be restricted to reduce disturbance to wildlife.

**6.4 Objective:** On an annual basis, provide for 3,000 high quality wildlife photography visits to the Minnesota River Valley and adjacent areas.

#### *Strategies:*

- 6.4.1 Provide the public with no fewer than two portable photography blinds to be used at specific sites throughout the Refuge. In addition, allow the public to use existing hunting blinds during off-season for additional wildlife photography sites.
- 6.4.2 In cooperation with the Minnesota Nature Photography Club and others, enhance and promote the annual Refuge photography contest and display winning photos in Refuge Visitor Center for a 45-day period each year.
- 6.4.3 Maintain strong partnership with the Minnesota Nature Photography Club and continue to provide monthly meeting space for this organization.

### ***Wildlife Interpretation***

**Discussion:** Several of the strategies presented in the following five objectives were developed to address the issue of eliminating confusing rules and regulations, which was highlighted in Chapter 2. Due in part to the land ownership patterns within the Minnesota River Valley, there is some public confusion about what type of recreation is appropriate on Refuge lands and where this recreation is allowed. Some additional strategies aimed at this issue can be found under the Public Use Facilities and Land Protection Goal.

**6.5 Objective:** By 2004, provide for 30,000 high quality wildlife interpretive visits per year to the Refuge and Waterfowl Production Areas. Fifty



percent of visitors will independently report that “wildlife comes first” on System lands and understand the need for seasonal closures on sensitive wildlife habitats.

**Discussion:** Through the use of brochures, kiosks, web sites, and interpretive programs, the Refuge and District have a great opportunity to interpret the value of wildlife and their habitats to historic cultures and today’s society. Interpretive products will be dynamic, of high quality, and will articulate the importance of Service lands to local and national conservation efforts. The foundation of these programs and activities will be a revised and upgraded interpretive plan for the Refuge that will address both on-site and off-site opportunities.

*Strategies:*

- 6.5.1 By 2004, review, revise, and upgrade the Refuge’s Interpretive Plan to reflect Refuge contribution to local and national conservation efforts. The plan will identify a Refuge theme that will be promoted in all interpretive products.
- 6.5.2 Upgrade and/or replace Refuge Visitor Center exhibits consistent with the Refuge theme. New exhibits need to be dynamic, affordable, and easy to repair and replace if needed.
- 6.5.3 Upgrade and replace all interpretive and information panels that exist on Refuge kiosks consistent with the Refuge theme.
- 6.5.4 Develop appropriate signs and materials which interpret the cultural and historic sites located on the Refuge and their relationship with historic wildlife populations. Six kiosks that serve this purpose have been identified in the current Refuge Sign Plan.
- 6.5.5 In cooperation with Refuge volunteers and others, conduct no fewer than 125 high quality interpretive programs annually. Keep interpretive programming fresh by continually upgrading, improving, and/or replacing individual programs.
- 6.5.6 In cooperation with the Friends of the Minnesota Valley, upgrade the interpretive and educational materials offered for sale in the Blufftop Bookshop.
- 6.5.7 Upgrade audio visual equipment in the Visitor Center auditorium, update the content of the orientation slide show and offer a variety of wildlife-related videos for the visiting public.

- 6.5.8 Write and distribute no fewer than 24 news releases each year that increase the public's understanding and knowledge of the Refuge and its programs.
- 6.5.9 In cooperation with many partners, sponsor no fewer than 10 special events annually that engage the public in Refuge activities and increase people's knowledge and understanding of wildlife conservation and associated issues.

### ***Environmental Education***

**6.6 Objective:** By 2004, provide environmental education programming to no less than 12,000 students per year followed by 2 percent annual growth until 2017. Eighty percent of students will report an increased desire to protect fish and wildlife habitats as a result of the programs.

**Discussion:** Consistent with the Refuge Mission, Refuge staff will provide high quality environmental education services to teachers and school districts throughout the urban and suburban Twin Cities Metropolitan Area. The curriculum will directly relate to Refuge management activities and it will meet the State of Minnesota environmental education graduation requirements. In order to keep it fresh and dynamic, the curriculum will be continually improved in concert with area teachers.

#### *Strategies:*

- 6.6.1 The Refuge's environmental education curriculum will be thoroughly reviewed by 2003 and every 4 years thereafter with the assistance of local educators. Ensure curriculum is fresh and dynamic and meets the needs of students in preschool on up to high school seniors.
- 6.6.2 Effectively promote the environmental program through a number of mediums including an annual syllabus and maintaining current information on the Refuge's web page and voice mail systems.
- 6.6.3 Refine and expand the use of Partnership Agreements with area schools in order to clearly articulate program goals and objectives and to build strong educational partnerships.
- 6.6.4 Emphasize the delivery of environmental education services to inner-city schools with both on-site and off-site programming. Secure funding through partnerships for busing for those schools that do not have the ability to assume those costs on their own.
- 6.6.5 Develop and strengthen internships/work study opportunities through partnerships with academic institutions. In partnership with local universities, hire interns in the natural resource field using funds provided to the Refuge

annually through the Jack Lynch Endowment. Where possible, leverage these funds with those provided by the universities.

- 6.6.6 Following completion of a new environmental education facility, expand environmental education programming to suburban and rural schools and incorporate the use of waterfowl production areas in curriculum.
- 6.6.7 Administer the Regional Resource Center as an integral component of the Refuge's environmental education program by providing appropriate educational and interpretive materials to area schools.

### ***Inappropriate Recreational Uses:***

The Refuge Improvement Act established six priority uses of the Refuge System (which includes Waterfowl Production Areas). These priority uses all depend on the presence of, or expectation of the presence, of wildlife, and are thus called wildlife-dependent uses. These uses are hunting, fishing, wildlife observation, photography, environmental education, and interpretation. As outlined in Chapter 2, unauthorized biking on Refuge lands and horseback riding beyond the State Trail have been identified as two uses that are not wildlife-dependent and will be evaluated in this plan.

### **Mountain Biking**

**6.7 Objective:** By 2003, working with the MnDNR, the City of Bloomington, mountain biking organizations and others, eliminate inappropriate biking on Refuge lands and concentrate this activity on authorized and designated trails only.

**Discussion:** For a number of reasons, including a collective inability to complete the State Trail, portions of the river valley and the Bloomington Bluffs have been used for several years by mountain biking enthusiasts. This area is very popular and, due to extensive and virtually unrestricted mountain bike use, considerable bluff and trail erosion has occurred over time. Unfortunately, significant unauthorized mountain biking currently occurs on Refuge lands. This situation must be corrected in the near future if we are to remain responsible natural resource managers.



Photograph by Rick Schultz

*Strategies:*

- 6.7.1 In cooperation with the City of Bloomington, eliminate mountain biking on the Bloomington Bluffs between Indian Mounds School and I-35W. In addition, develop and implement a plan to address the environmental degradation that currently exists throughout this area.
- 6.7.2 In cooperation with the City of Bloomington and others, monitor and, if needed, strictly enforce appropriate trail usage on Refuge and City lands.

Horseback Riding

**6.8 Objective:** By 2003, eliminate horseback riding on all Refuge and District lands and trails except on the State Trail.

**Discussion:** A limited amount of horseback riding occurs on Refuge lands beyond the State Trail. It occurs on specific trails on both the Wilkie and Louisville Swamp units consistent with the 1984 Master Plan. The National Wildlife Refuge System Improvement Act of 1997 called for a focus on wildlife-dependent activities and a re-examination of other recreational uses. Horseback riding is not considered to be a wildlife-dependent activity and may conflict with other priority recreational uses. In light of the Act, the Refuge will limit horseback riding to lands that are part of the State Trail System.

*Strategies:*

- 6.8.1 Following appropriate public notice, and the installation of signs, restrict horseback riding to the State Trail within the Louisville Swamp Unit.
- 6.8.2 Consistent with the Refuge web site and its brochures, ensure that good quality information about horseback usage on Refuge/State Trail lands is provided to the public.
- 6.8.3 In cooperation with the MnDNR and the horseback riding community, monitor and, if needed, strictly enforce appropriate trail usage of the Louisville Swamp Unit.

***Volunteer and Intern Programs:***

**6.9 Objective:** Provide a highly visible and dynamic volunteer and intern work force to assist in all aspects of Refuge and District operations including environmental education, habitat improvement and visitor facility maintenance.

*Strategies:*

- 6.9.1 Re-establish the Volunteer Council that will provide support and bring a variety of perspectives to the Refuge on volunteer issues.

- 6.9.2 Enhance communication with Refuge volunteers through various forums including periodic newsletters, a volunteer hotline, the Refuge's web site, and recognition picnics, dinners and socials.
- 6.9.3 Renew efforts to provide high quality training to Refuge volunteers so they are able to effectively and efficiently complete projects and responsibilities.
- 6.9.4 Expand efforts to provide volunteer opportunities to members of the disabled public.
- 6.9.5 Continue to provide Refuge projects for kids at risk through a variety of programs including the Twin Cities Tree Trust, Skills for Tomorrow, and community programs like Sentenced to Serve.
- 6.9.6 Seek to expand volunteer opportunities for retired citizens and explore the possibility of developing trailer pads and a septic system for seasonal retiree volunteers with recreational vehicles.
- 6.9.7 Employ interns as needed through the use of the Jack Lynch Endowment Fund. Leverage the use of these funds by entering into agreements with universities and colleges.

### ***Public Use Facilities***

**6.10 Objective:** By 2005, develop new and maintain existing facilities to promote public advocacy and use of the Refuge and Waterfowl Production Areas. Ninety percent of visitors will report satisfaction with the safety, comfort and functionality of these facilities and express a desire for a return visit.

**Discussion:** Public use facilities will be developed and maintained at a high standard ensuring public safety and a positive reflection upon the Service. Included on this list of facilities are Refuge trails and parking lots, the existing and future visitor centers, the Rapids Lake historic home, historic buildings and structures, and the Minnesota Valley State Trail. To the extent practical, all facilities will be made accessible to disabled Refuge visitors. Please note that Strategies 3, 4, and 5 will be completed with Airport Mitigation funds. Existing and proposed trails, parking lots and facilities are depicted in Figures 14-17.

#### ***Strategies:***

- 6.10.1 By 2003, submit a major Visitor Center upgrading package that addresses current outstanding maintenance needs and that will serve to keep this facility in excellent condition for the next 10 years.

Figure 14: Existing and Proposed Trails and Facilities: Long Meadow Lake and Black Dog Units

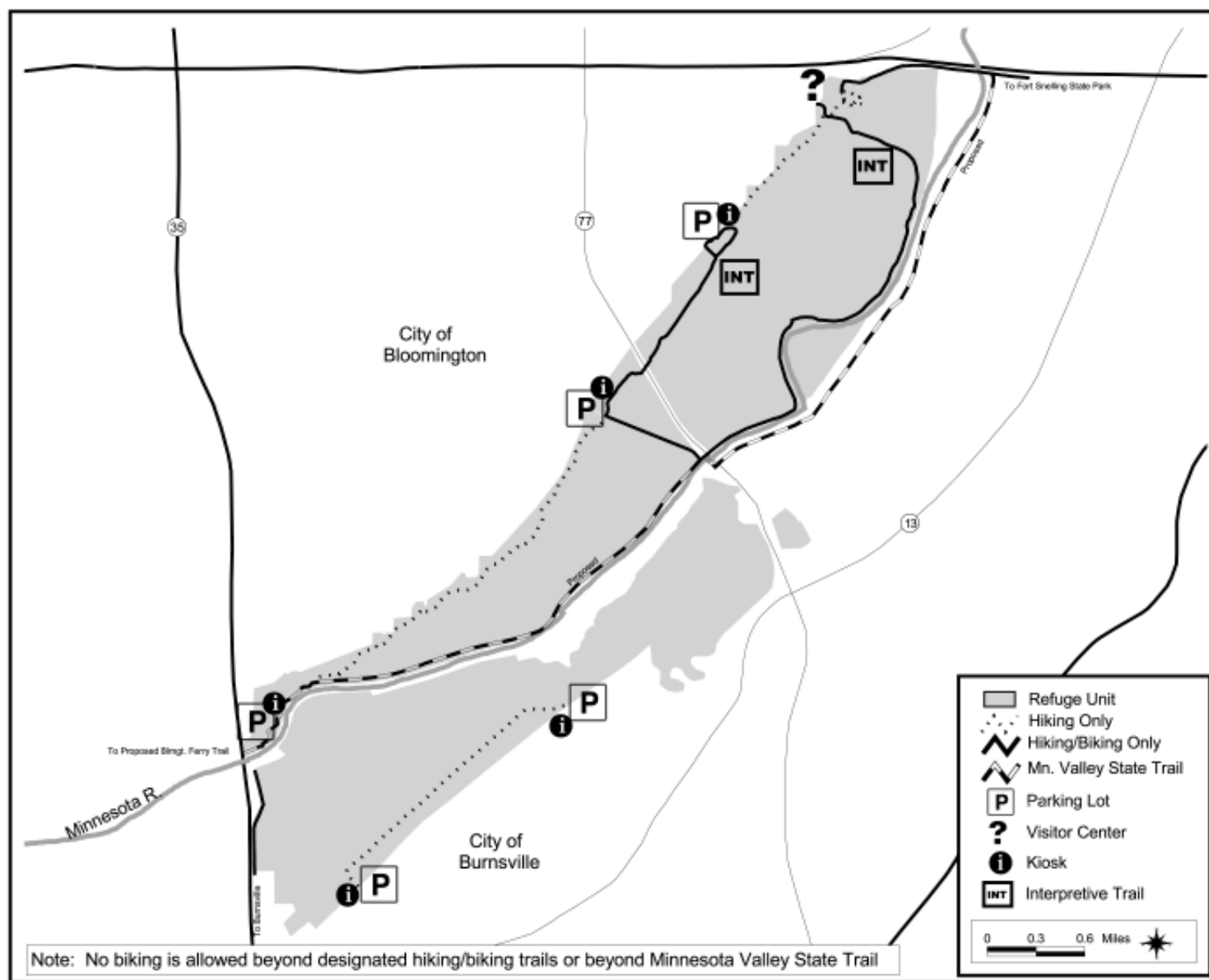


Figure 15: Existing and Proposed Trails and Facilities: Upgrala, Wilkie and Bloomington Ferry Units

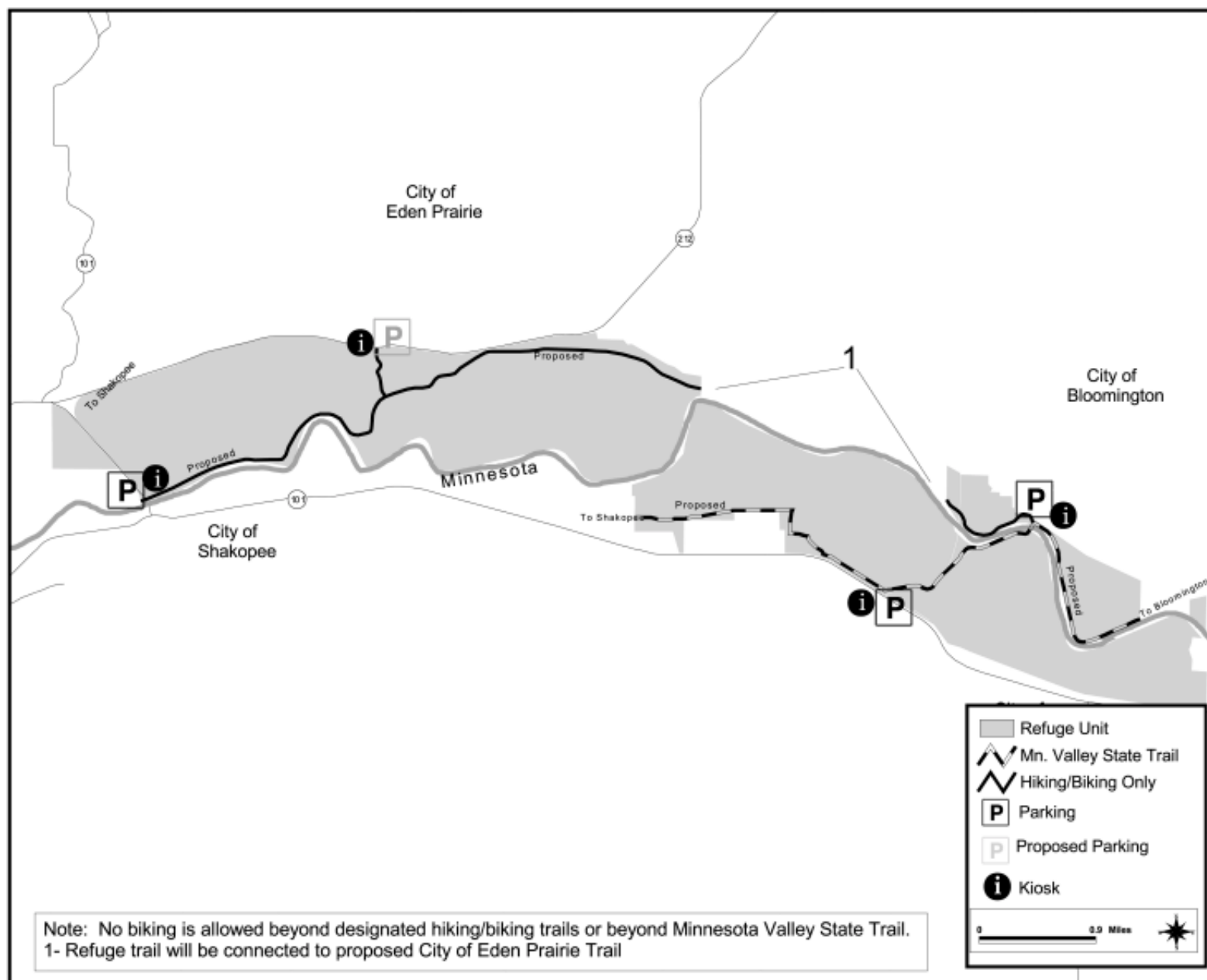


Figure 16: Existing and Proposed Trails and Facilities: Chaska Lake Unit

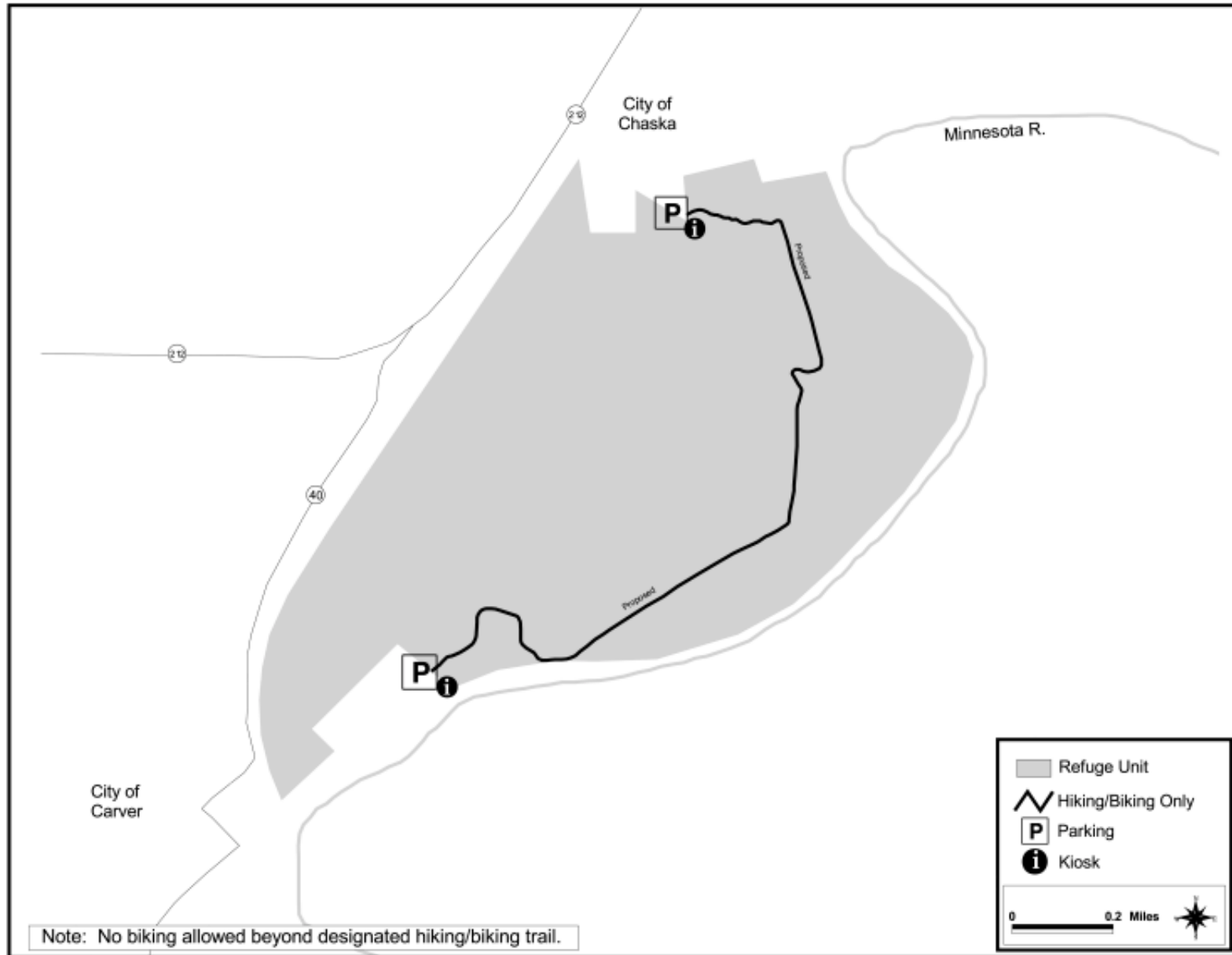
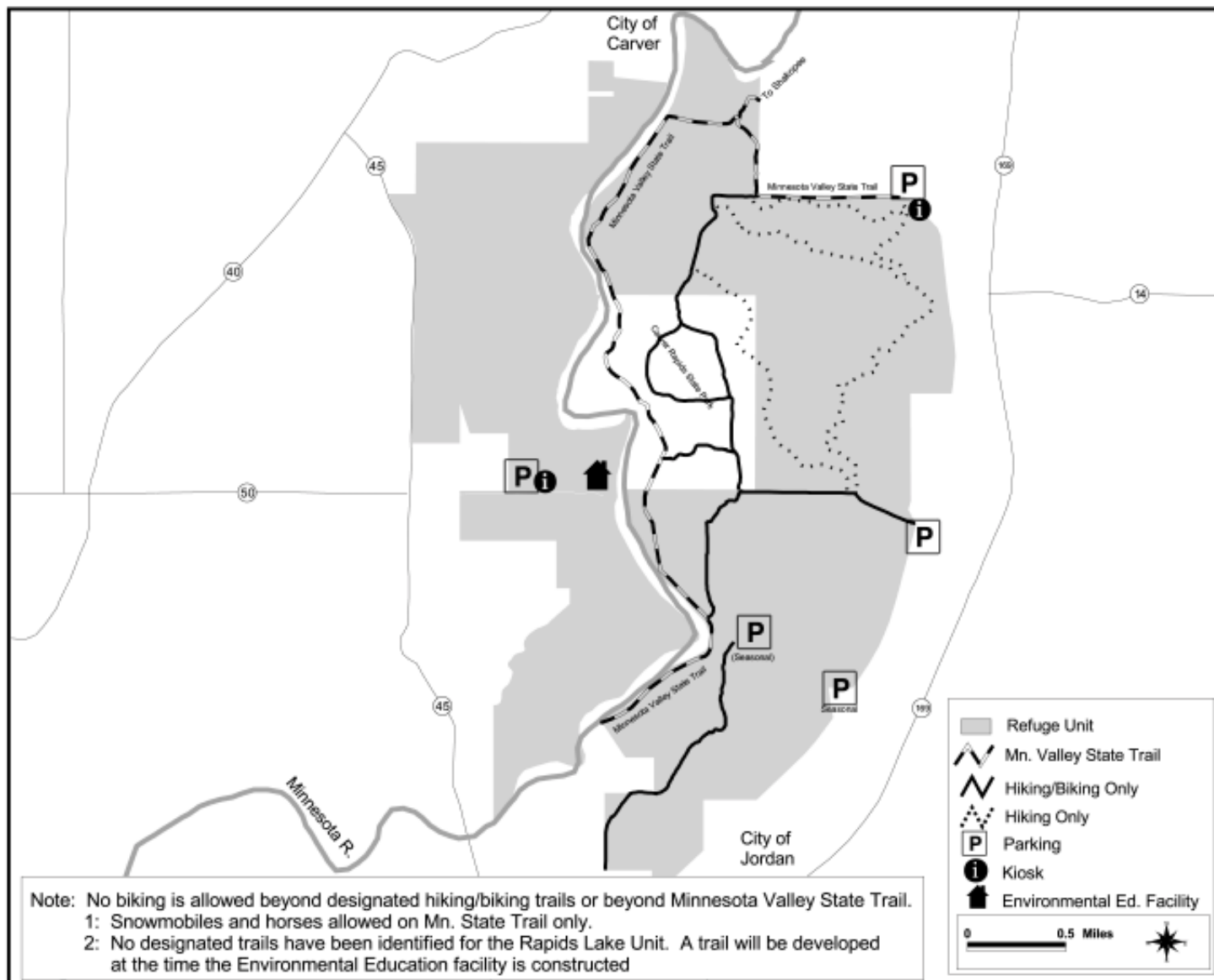




Figure 17: Existing and Proposed Trails and Facilities: Rapids Lake and Louisville Swamp Units



- 6.10.2 By 2004, all Refuge facilities will be reviewed to determine what measures need to be taken to make them more accessible to disabled persons. Following this review, an implementation plan will be developed and funding will be sought to upgrade these facilities.
- 6.10.3 By 2004, begin construction of an environmental education facility on or near the Rapids Lake Unit, or separate classroom modules on at least three Refuge Units. As part of this effort, design and build trails, interpretive kiosks, and parking lots in support of the facilities and programs.
- 6.10.4 Obtain intern housing on or near the Rapids Lake Unit to meet expanded responsibilities for wildlife interpretation and environmental education as well as to attract candidates of diverse backgrounds, cultures, and experiences.
- 6.10.5 By 2005, restore the Rapids Lake historic home and develop it as an interpretive and environmental education site. In addition, allow use of this facility by local governments and non-profit organizations for meetings, workshops, and small conferences.
- 6.10.6 Stabilize the historic buildings on the Jabs and Ehmler farm sites to ensure their longevity and their historic interpretive value.
- 6.10.7 Obtain operational funding to employ a maintenance worker (WG- 4749-6/7) to enhance the Refuge's capability to address its maintenance needs.
- 6.10.8 Establish a hard surfaced trail open to hiking and bicycling between the Refuge Visitor Center and the Bass Ponds.
- 6.10.9 In cooperation with the cities of Chaska and Carver, develop a plan for the Chaska Unit and nearby city lands that addresses wildlife interpretive trails, public parking, and related interpretive facilities and programming.
- 6.10.10 Based on Fiscal Year 2001 costs, seek a sufficient increase in funds to maintain, to a high standard, the existing Refuge Visitor Center, parking lots, kiosks, and signing.
- 6.10.11 Seek annual funding to enter into contracts for routine mowing, snow plowing, and custodial services for the Refuge's visitor centers, parking lots, and nature trails.
- 6.10.12 Using Trust funds, employ a supervisory park ranger (GS-025-11/12) who will initiate early planning for new environmental education center(s) and associated facilities. Following completion of the center, this employee will assume responsibility for operations of these facilities.

- 6.10.13 Using Trust funds, employ up to two park rangers (GS-025-5/7/9) to assist in planning and conducting environmental education programming from the new center or classroom modules.
- 6.10.14 Seek construction funding to replace the existing Shakopee shop facility with a combination cold storage/heated staff building. The new building would also contain a small office suitable for two staff.
- 6.10.15 Seek construction funding to replace the existing Rapids Lake maintenance facility. The new facility would contain office space suitable for three Refuge maintenance staff and three District employees.

**6.11 Objective:** To work in partnership with the MnDNR, cities, and other organizations to finish the Minnesota Valley State Trail and to provide appropriate public access to the trail from Refuge lands.

**Discussion:** This objective addresses the issue of completion of the Minnesota Valley State Trail, a primary issue highlighted in Chapter 2. We hope that preparation of this CCP will prompt a renewed effort by citizens, public agencies, private conservation organizations, and recreational users of the valley to place a high priority on the completion of the Minnesota Valley State Trail. Upon its completion, there is great potential for recreational users of this trail to develop an enhanced appreciation for the cultural and natural resource values of the Refuge as well as the greater Minnesota River Valley.

*Strategies:*

- 6.11.1 In cooperation with the MnDNR, identify the State Trail corridor across the Wilkie Unit, which will connect this part of the Refuge with the City of Shakopee.
- 6.11.2 In cooperation with the MnDNR, identify the State Trail corridor across the Long Meadow Lake Unit between Old Cedar Avenue and Lyndale Avenue. Seek sources of funding to construct access across at least two large gullies that occur along this section of the trail.
- 6.11.3 Working with partners, seek sources of funding (TEA-21, etc.) for the replacement of the Old Cedar Avenue Bridge with a pedestrian bridge that will connect Old Cedar Avenue with the State Trail.
- 6.11.4 Working with partners, acquire in fee or easement remaining lands on the Bloomington Ferry Unit that will allow the completion of the State Trail between I-35W and the Bloomington Ferry Bridge. Work with the City of

Bloomington and the MnDNR to specifically identify the corridor on this section of the State Trail.

- 6.11.5 In cooperation with the City of Eden Prairie, develop a hiking and bicycling trail on the north side of the Minnesota River connecting River View Road with the Bloomington Ferry Bridge.
- 6.11.6 Following Service acquisition of the Upgrala Unit, develop a hiking and bicycling trail connecting River View Road with the City of Shakopee trail facilities located near U.S. Highway 101. This work will be completed in cooperation with the cities of Eden Prairie and Shakopee.
- 6.11.7 As soon as practicable and in cooperation with all appropriate parties, develop a brochure that specifically identifies all trails within the Lower Minnesota River Valley and their allowed uses. This information will also be made available on the Refuge's web site.